Service Manual

VL1000™ ERS Luminaire

02.9663.0010

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Express yourself.

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VARI✳LITE® products are protected by one or more of the following patents, and other pending patent applications worldwide:

U. S. Patents No. 6,123,436; 6,113,252; 6,046,861; 6,031,749; 6,011,640; 5,969,868; 5,959,768; 5,934,794; 5,882,107; 5,829,868; 5,825,548; 5,798,619; 5,774,273; 5,769,527; 5,758,956; 5,728,994; 5,640,061; 5,590,954; 5,454,477; 5,432,691; 5,367,444; 5,329,431; 5,307,295; 5,282,121; 5,278,742; 5,209,560; 5,186,536; 5,073,847; 5,010,459; 4,980,806; 4,972,306; 4,800,474; 4,779,176; 4,701,833; 4,602,321;

U. S. Design Patents No. 439,356; 420,332; 417,300; 415,301; 413,995; 377,338; 366,712; 359,574; 350,408; 347,113;

Australia Patents No. 693,691; 683,695; 667,109; 649,264; 646,588; 586,095; 576,400; 546,433;

Australia Design Patents No. 128,796; 128,795;

Canada Patents No. 2,070,670; 2,050,375; 1,270,675; 1,259,058; 1,181,795;

Canada Design Patents No. 81,234; 81,233; 76,046;

European (UK) Patents No. 0 652 400; 0 586 049; 0 565 218; 0 547 732; 0 534 710; 0 495 305; 0 474 202; 0 379 970; 0 253 082; 0 253 081; 0 248 974; 0 192 882; 0 140 994; 0 060 068;

Germany Patents No. 694 25 943.8; 693 14 122.0; 692 08 615.3; 692 07 692.1; 691 31 478.0; 691 21 029.2; 690 33 385.4; 37 89 166.9; 37 68 727.1; 37 51 804.6; 37 50 201.8; 35 87 270.5; 32 79 888.1; 32 74 291.6;

Germany Design Patents No. M 98 01 745.4; M 96 04 515.9; M 96 04 514.0; M 94 07 689.8; M 94 02 951.2; M 499 03 583.6; M 498 11 203.9; G 93 12 884.3;

Spain Patents No. 2 090 191; 2 084 289; 2 020 960; 0 548 328;

Spain Utility Model Patent No. 2.031.748;

Spain Design Patents No. 0.137.502; 0.137.501; 0.133.573;

Greece Patent No. 910.400.544;

Hong Kong Patents No. 965/1990; 285/1987;

Japan Patents No. 2,843,696; 2,059,669; 2,055,324; 2,002,168; 1,966,525; 1,889,481; 1,792,721; 1,770,241; 1,723,825; 1,683,007; 1,533,011;

Japan Design Patents No. 985,985-1; 985,985; 947,552; 945,436-1; 945,436; 1,106,089; 1,077,598; 1,072,598; 1,060,414; 1,002,123;

Korea Patents No. 76,310; 42,639; 283,770; 181,180;

Korea Design Patents No. 209,896; 209,895;

Mexico Patent No. 180,148;

Singapore Patents No. 663/90; 134/87;

Taiwan Patents No. 78,726; 66,975; 65,380; 28,275;

United Kingdom Design Registrations No. 2082526; 2072562; 2056387; 2056386; 2042174; 2038212; 2033108; 2029499.

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VL1000™ ERS Luminaire Service Manual

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VL1000™ ERS Luminaire Service Manual
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How To Obtain Warranty Service

A copy of the Vari-Lite, Inc. Limited Warranty was included in the shipping package for this VARI✻LITE® product.

To obtain warranty service, please contact customer service at 1-877-VARI-LITE (1-877-827-4548) or customerservice@vlint.com and request a Return Material Authorization (RMA) for warranty service. You need to provide the model and serial number of the item being returned, a description of the problem or failure and the name of the registered user or organization. If available, you should have your sales invoice to establish the date of sale as the beginning of the warranty period.

Once you obtain the RMA, pack the product in its original packing material along with a copy of your invoice (if available) and write the RMA number legibly on or near the shipping address label. Return the unit, freight prepaid to:

Vari-Lite, Inc.
201 Regal Row
Dallas, TX 75247
Attention: Warranty Service

As stated in the warranty, it is required that the shipment be insured and FOB our service center.

Manual Revision History

PAGE NUMBER	CHANGE NUMBER
Title Page – xviii	D
1-191	D

VERSION	DATE
Basic	14-Mar-02
Revision A	25-Apr-02
Revision B	02-May-02
Revision C	18-Jun-02
Revision D	23-Oct-02

Compliance Notice

FCC This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with Vari-Lite system, service, and safety guidelines, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

CE

Declaration of Conformity

We declare, under our sole responsibility, that this product complies with the relevant clauses of the following standards and harmonized documents:

Safety

EN 60598-1:1997 Luminaire Safety Standard, General Requirements
EN 60598-2 17:1989 Specification for Luminaires for Stage and Studio Lighting

EMC

EN 55022A:1994 Radiated and Conducted Emissions
EN 50082-1:1997 Generic Immunity Standard

We certify that the product conforms to the protection requirements of council directives: 73/23/EEC (LVD) and 89/336/EEC (EMC)

Safety Notice

It is extremely important to read ALL safety information and instructions provided in this manual and any accompanying documentation before installing and operating the products described herein. Heed all cautions and warnings during installation and use of this product.

Safety symbols used throughout this manual are as follows:

CAUTION advising of potential damage to product.

WARNING advising of potential injury or death to persons.

GENERAL INFORMATION PERTAINING TO PROTECTION AGAINST ELECTRICAL SHOCK, FIRE, EXPOSURE TO EXCESSIVE UV RADIATION, AND INJURY TO PERSONS CAN BE FOUND BELOW.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST FIRE

1. VARI✻LITE® luminaires have been designed for use only with certain Philips and Osram HID lamps. Note lamp type (MSR400, MSR575HR etc.) before replacing lamps. Installing another type of lamp may be hazardous.
2. Luminaires may be mounted on any type of surface as long as mounting instructions are followed. See instructions detailed in this manual.
3. Replace fuses with same type and rating only.
4. Note distance requirement from combustible materials or illuminated objects for VARI✻LITE® luminaires.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK

1. VARI✻LITE® luminaires are designed for dry locations only. Exposure to rain or moisture may damage luminaire.
2. Disconnect power before servicing any VARI✻LITE® equipment.
3. Servicing to be performed by qualified personnel only.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST EXCESSIVE EXPOSURE TO UV RADIATION

1. Many VARI✳LITE® luminaires use an HID type lamp that produces UV radiation. DO NOT look directly at lamp.
2. It is hazardous to operate luminaires without lens or shield. Shields, lenses, or ultraviolet screens shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired. For example, by cracks or deep scratches.

WARNING:
INSTRUCTIONS FOR PROTECTION AGAINST INJURY TO PERSONS

1. Exterior surfaces of the luminaire will be hot during operation. Use appropriate safety equipment (gloves, eye protection, etc.) when handling and adjusting hot equipment and components.
2. Luminaires will have a hot lamp when operating. Disconnect power and allow lamp to cool before replacing.
3. Arc lamps emit ultraviolet radiation which can cause serious skin burn and eye inflammation. Additionally, arc lamps operate under high pressure at very high temperatures. Should the lamp break, there can exist a danger of personal injury and/or fire from broken lamp particles being discharged.
4. Wear eye protection when relamping.
5. Appropriate safety equipment (gloves, eye protection) should be used when handling damaged lamps.
6. If lamp is touched with bare hands, clean lamp with denatured alcohol and wipe with lint-free cloth before installing or powering up the luminaire.
7. The lamp shall be changed if it has become damaged or thermally deformed.

WARNING:
RF INTERFERENCE

1. This is a Class A product. In a domestic environment this product may cause radio interference, in which case, the user may be required to take adequate measures.

ARC LAMP CHARACTERISTIC CONSIDERATIONS

1. Arc lamps require a period of time to relight after a power interruption or a severe voltage dip. In some cases, lamp will automatically relight after it has cooled depending on Lamp Power-Up State (L ON/ LOFF) system configuration setting.
2. Burning position is Universal.

Sicherheitshinweise

Es ist äußerst wichtig, ALLE Sicherheitsinformationen und -hinweise in diesem Handbuch und dem beiliegenden Informationsmaterial zu lesen, bevor Sie die hierin beschriebenen Produkte installieren bzw. bedienen. Halten Sie bei der Installation und dem Einsatz dieses Produkts alle Warnhinweise und Vorsichtsmaßnahmen ein.

Folgende Sicherheitssymbole werden in diesem Handbuch verwendet:

VORSICHT - weist auf möglichen Produktschaden hin.

WARNUNG - weist auf mögliche Körperverletzung und Lebensbedrohung hin.

NACHSTEHEND FINDEN SIE ALLGEMEINE HINWEISE ÜBER SICHERHEITSVORKEHRUNGEN GEGEN ELEKTROSCHOCK, FEUER, ÜBERHÖHTE UV-STRAHLUNG UND KÖRPERVERLETZUNGEN.

WARNUNG:
HINWEISE ZUM FEUERSCHUTZ

1. VARI✻LITE®-Scheinwerfer sind ausschließlich für den Einsatz mit bestimmten Philips und Osram HID-Lampen geeignet. Achten Sie auf den Lampentyp (MSR400, MSR575HR etc.), bevor Sie die jeweiligen Lampen ersetzen. Die Installation eines anderen Lampentyps kann gefährlich sein.
2. Scheinwerfer können auf jeder beliebigen Oberfläche montiert werden, solange Sie die Montageanweisungen befolgen. Detaillierte Hinweise finden Sie in diesem Handbuch.
3. Ersetzen Sie Sicherungen nur mit Sicherungen vom gleichen Typ und gleicher Stärke.
4. Beachten Sie die Einhaltung des erforderlichen Sicherheitsabstandes der VARI✻LITE®-Scheinwerfer von brennbarem Material oder beleuchteten Objekten.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN ELEKTROSCHOCK

1. VARI✻LITE®-Scheinwerfer eignen sich ausschließlich für trockene Standorte. Regen oder Feuchtigkeit können die Scheinwerfer beschädigen.
2. Unterbrechen Sie die Stromzufuhr, bevor Sie mit der Arbeit an VARI✻LITE®-Geräten beginnen.
3. Die Geräte sollten nur von qualifiziertem Personal gewartet werden.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN ÜBERHÖHTE UV-STRAHLUNG

1. Viele VARI✻LITE®-Scheinwerfer verwenden einen HID-Lampentyp, der UV-Strahlen abgibt. SCHAUEN SIE NICHT direkt in die Lampe.

2. Es ist gefährlich, Leuchten ohne Linsen oder Blenden zu bedienen. Blenden, Linsen oder Ultraviolettschirme müssen ausgetauscht werden, sofern deren Schutzwirkung durch sichtbare Beschädigung (z. B. Sprünge oder Schrammen) eingeschränkt ist.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN KÖRPERVERLETZUNGEN

1. Bei Betrieb sind die Außenflächen der Scheinwerfer heiß. Verwenden Sie bei der Bedienung von aufgeheizter Apparatur die jeweils geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz etc.).
2. Bei Betrieb der Scheinwerfer ist die Lampe heiß. Unterbrechen Sie die Stromzufuhr und lassen Sie die Lampe abkühlen, wenn Sie diese austauschen.
3. Bogenlampen senden ultraviolette Strahlen aus, die Hautverbrennungen und Augenentzündungen verursachen können. Der Betrieb von Bogenlampen erfolgt unter Hochdruck und bei hohen Temperaturen. Sollte die Lampe zerbrechen, besteht die Gefahr von Körperverletzung bzw. von Feuer, das von Lampenteilen ausgelöst werden kann.
4. Tragen Sie beim Austausch der Lampen einen Augenschutz.
5. Die geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz) sollte beim Umgang mit beschädigten Lampen verwendet werden.
6. Wenn die Lampe mit bloßen Händen berührt wird, reinigen Sie sie mit denaturiertem Alkohol und einem flusenfreien Tuch, bevor Sie die Scheinwerfer installieren oder in Betrieb nehmen.
7. Wenn die Lampe beschädigt oder durch Hitzeeinwirkung deformiert ist, muß diese ausgetauscht werden.

WARNUNG:
HF-INTERFERENZ

1. Es handelt sich um ein Produkt der Klasse A. In einer Wohnumgebung kann das Produkt Hochfrequenzstörungen verursachen. In diesem Fall müssen eventuell geeignete Maßnahmen getroffen werden.

BESONDERHEITEN VON BOGENLAMPEN

1. Bogenlampen benötigen eine gewisse Zeitdauer, um nach einem Stromausfall oder einem Spannungsgefälle wieder aufzuleuchten. In einigen Fällen wird die Lampe nach Abkühlung automatisch wieder aufleuchten, je nach der Systemkonfigurationseinstellung des Lampeneinschaltungsstatus (L ON/ LOFF).
2. Die Brennposition ist Universal.

Notes de sécurité

Avant de procéder à l'installation des produits décrits dans ce guide et de les mettre en marche, il est extrêmement important de lire TOUS les renseignements et TOUTES les directives de sécurité contenues dans ce guide ainsi que toute documentation jointe. Tenir compte de tous les avertissements et suivre toutes les précautions pendant l'installation et l'utilisation de cet appareil.

Les symboles de sécurité utilisés dans ce guide sont les suivants :

ATTENTION Ce symbole annonce que l'appareil risque d'être endommagé.

AVERTISSEMENT Ce symbole annonce qu'il y a risque d'accident grave ou même fatal.

CETTE SECTION CONTIENT DES INFORMATIONS GÉNÉRALES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES , LES INCENDIES, L'EXPOSITION EXCESSIVE AUX RAYONS UV ET TOUT AUTRE ACCIDENT POUVANT ENTRAÎNER DES BLESSURES.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES INCENDIES

1. Les luminaires VARI✻LITE® ont été conçus pour être utilisés uniquement avec certaines lampes Philips et Osram HID. Vérifier le type de lampe (MSR400, MSR575HR etc.) avant de remplacer les lampes. L'installation d'un autre type de lampe peut poser un danger.
2. Les luminaires peuvent être fixés sur tout type de surface tant que les directives de montage sont respectées. Voir les explications détaillées dans ce guide.
3. Ne remplacer les fusibles qu'avec ceux du même type, ayant les mêmes caractéristiques.
4. Vérifier la distance à respecter entre les matériaux combustibles ou les objets illuminés et les luminaires VARI✻LITE®.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES

1. Les luminaires VARI✻LITE® sont conçus pour une utilisation au sec uniquement. Une exposition à la pluie et à l'humidité risque d'endommager le luminaire.
2. Débrancher l'appareil avant de procéder à la révision de tout matériel VARI✻LITE®.
3. Les révisions doivent être effectuées uniquement par des personnes qualifiées.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE UNE EXPOSITION EXCESSIVE AUX RAYONS UV

1. Plusieurs luminaires VARI✳LITE® utilisent une lampe de type HID qui produit des rayons UV. NE PAS fixer son regard sur la lampe.
2. L'utilisation des luminaires sans lentille ou blindage pose des risques. Tous blindages, lentilles ou écrans ultraviolet visiblement endommagés au point que leur efficacité en est affectée doivent être remplacés, par exemple s'il y a des fissures ou de profondes rayures.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES ACCIDENTS POUVANT ENTRAÎNER DES BLESSURES

1. Les surfaces externes du luminaire deviennent brûlantes quand l'appareil est en marche. Pour manœuvrer ou ajuster des appareils brûlants et leurs composants, se protéger suffisamment (gants, protection pour les yeux, etc.).
2. La lampe du luminaire est brûlante lorqu'il est en marche. Débrancher le courant et attendre que la lampe ait refroidi avant de la remplacer.
3. Les lampes à arc émettent des rayons ultraviolets pouvant causer de graves brûlures sur la peau et une inflammation des yeux. De plus, les lampes à arc fonctionnent sous haute tension à de très hautes températures. Si la lampe se casse, les particules de la lampe cassée peuvent causer blessures et/ou incendie en s'éparpillant.
4. Se protéger les yeux pour remplacer la lampe.
5. Utiliser des appareils de protection appropriés (gants, protection des yeux) pour manier des lampes endommagées.
6. Si la lampe a été touchée avec des mains nues, la nettoyer avec de l'alcool dénaturé et l'essuyer avec un chiffon non-pelucheux avant d'installer ou de brancher le luminaire.
7. Si la lampe a été endommagée ou a reçu une déformation thermique, elle doit être remplacée.

AVERTISSEMENT:
INTERFÉRENCE RF

1. Cet appareil est de Classe A. Dans un environnement domestique, cet appareil peut causer des interférences radio, et si c'est le cas, l'utilisateur peut avoir à prendre des mesures adéquates.

CONSIDÉRATIONS DES CARACTÉRISTIQUES DE LAMPES À ARC

1. Après une interruption de courant ou une baisse importante de voltage, les lampes à arc mettent du temps avant de se rallumer. Dans certains cas, la lampe se rallumera automatiquemet après s'être refroidie. Cela dépend de la manière dont le système est réglé pour le statut de mise en marche de la lampe (L ON/ LOFF).
2. La position Brûler est Universelle.

Aviso sobre Seguridad

Es muy importante leer TODA la información e instrucciones sobre seguridad que se indica en este manual así como en los documentos adjuntos antes de instalar y operar los productos descritos. Se debe prestar atención a todos los avisos y advertencias durante la instalación y uso de este producto.

Los símbolos de seguridad usados en este manual son los siguientes:

CUIDADO, indica posibles daños al producto.

ADVERTENCIA, indica posibles lesiones o muerte a las personas.

LA INFORMACIÓN GENERAL RELACIONADA A LA PROTECCIÓN CONTRAGOLPES DE CORRIENTE ELÉCTRICA, INCENDIO, EXPOSICIÓN EXCESIVA A RADIACIÓN ULTRA VIOLETA Y LESIONES A LAS PERSONAS SE PUEDE ENCONTRAR SEGUIDAMENTE:

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA INCENDIO

1. Las luminarias VARI✻LITE® han sido diseñadas para ser usadas solamente con algunas lámparas HID Philips y Osram. Tome nota del tipo de lámpara (MSR400, MSR575HR etc.) antes de reemplazarla. Instalación de otro tipo de lámpara puede ser peligroso.
2. Las luminarias se pueden instalar en cualquier tipo de superficie siempre que se sigan las instrucciones de instalación. Vea las instrucciones detalladas en este manual.
3. Reemplaze los fusibles solamente con los del mismo tipo y especificación.
4. Tome nota de los requerimientos de distancia de materiales combustibles u objetos iluminados para las luminarias VARI✻LITE®.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA CHOQUE ELÉCTRICO

1. Las luminarias VARI✻LITE® están diseñadas solamente para lugares secos. La exposición a la lluvia o humedad pueden dañar la luminaria.
2. Desconecte la energía antes de dar servicio a cualquier equipo de VARI✻LITE®.
3. El servicio debe ser realizado solamente por personal calificado.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA LA EXPOSICIÓN EXCESIVA DE RADIACIÓN ULTRA VIOLETA

1. Muchas luminarias VARI✳LITE® usan un tipo de lámpara HID que produce radiación UV. NO mire directamente a la lámpara.
2. Es peligroso operar luminarias sin lentes o protectores. Debe cambiar los protectores, lentes o pantallas ultravioletas si se aprecia que han sido dañadas, y que su efectividad pudiera estar deteriorada. Por ejemplo, si tuvieran rajaduras o raspaduras profundas.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTRA LESIONES DE PERSONAS

1. Las superficies exteriores de las luminarias están calientes durante su operación. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando haga ajustes en el equipo y componentes que están calientes.
2. Cuando las luminarias están en operación la lámpara estará muy caliente. Desconecte la energía y deje que la lámpara se enfríe antes de reemplazarla.
3. Las lámparas de arco emiten radiaciones ultravioletas que pueden ocasionar serias quemaduras a la piel e inflamación a los ojos. Además, las lámparas de arco operan a alta presión y muy alta temperatura. Si la lámpara se rompe, puede existir el peligro de lesiones al personal o un incendio ocasionado por las partículas de la lámpara rota que se caen.
4. Use protección para los ojos cuando vuelve a colocar una lámpara nueva.
5. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando trabaje con lámparas dañadas.
6. Si toca la lámpara con las manos, limpie la lámpara con alcohol desnaturalizado y con tela sin pelusas antes de instalar o volver a conectar la luminaria.
7. Cambie la lámpara si está dañada o deformada termicamente.

ADVERTENCIA:
INTERFERENCIA RF

1. Este es un producto de Clase A. En el ambiente de la casa este producto puede ocasionar radiointerferencia, en cuyo caso, el usuario debe tomar las medidas adecuadas.

CONSIDERACIONES SOBRE LAS CARACTERÍSTICAS DE LA LÁMPARA DE ARCO

1. Las lámparas de arco requieren un período de tiempo para volver a iluminarse después de una interrupción de energía o de una severa caída de voltaje. En algunos casos, la lámpara se volverá a iluminar en forma automática después que se ha enfriado dependiendo de la configuración del sistema de energía de la lámpara (L ON / L OFF) (L encendida / L apagada).
2. La posición de encendido es universal.

安全性に関する注意事項

ここに記載されている製品を取り扱う場合は、まず本マニュアルおよび付属のマニュアルの安全性に関する情報と説明をすべてお読みください。また、実際に本製品を取り付けたり使用する際には、すべての注意事項および警告に留意して作業してください。

本マニュアルでは、以下の安全マークを使用しています。

注意：製品に損傷を与える危険性があります。

警告：人身事故につながる危険性があります。

感電、火災、UV 放射に対する過度の露出、および人身事故を防ぐための一般的な情報については、以下の説明をお読みください。

警告：
火災の発生を防ぐためのヒント

1. VARI*LITE® 照明器具は、PhilipsおよびOsramのHIDランプを使用するように設計されています。ランプを交換する際は、ランプの種類（MSR400、MSR575HR など）を確認するようにしてください。他の種類のランプを取り付けると危険です。
2. 照明器具は、本マニュアルの指示に従って操作するかぎり、どのようなタイプの表面にでも取り付けることができます。詳細については、本マニュアルを参照してください。
3. ヒューズを交換する場合は、同じヒューズ（同じ種類、同じクラス）を使用してください。
4. VARI*LITE® 照明器具は、可燃性物質または他の光源から必要な距離だけ離して配置してください。

警告：
感電を防ぐためのヒント

1. VARI*LITE® 照明器具は、乾燥した環境で使用するように設計されています。雨で濡れる場所や湿気の多い場所に取り付けると、照明器具が傷むことがあります。
2. VARI*LITE® 照明器具を点検する場合は、必ず先に電源を切ってください。
3. 照明器具の点検は、資格を持つ技師のみが行うようにしてください。

警告：
過度の **UV** 放射にさらされないためのヒント

1. VARI*LITE® 照明器具の多くは､UV 放射を生ずる HID タイプのランプを使用しています。ランプを直視することは避けてください。
2. レンズまたはシールドを使わずに照明器具を点灯すると危険です。レンズ、シールド、紫外線画面は、ひび割れや深い引っかき傷などにより、その効力が損なわれるようになったら取り替えるようにします。

警告：
人身事故を防ぐためのヒント

1. 照明器具が点灯しているときは、その外側が熱くなります。熱くなった器具やコンポーネントを取り扱う際には、適切な防具（手袋や保護用眼鏡）を使用してください。
2. 照明器具が点灯しているときは、そのランプが熱くなります。ランプを交換する場合は、照明器具の電源を切り、ランプの温度が下がるまで待ってください。ランプの裏ぶたをあけると、遮断スイッチが働いて、ランプの電源が切れる場合があります。
3. アーク灯は紫外線を放射します。この紫外線によって、ひどい火傷を負ったり、目の炎症を起こすことがあります。さらに、アーク灯は、高圧高温の状態で光を発します。そのため、万一アーク灯が破損すると、飛び散った破片で人身事故や火災が発生する危険性があります。
4. 再点灯するときには、保護用眼鏡を着用してください。
5. 損傷したランプを取り扱う場合は、適切な防具（手袋や保護用眼鏡）を着用してください。
6. 手袋を着用せずに直接手でランプを触った場合は、変性アルコールを使ってランプをきれいにし、糸くずの出ない布で拭いてから照明器具を取り付け、電源を入れるようにします。
7. 傷がついたランプや熱によって変形したランプは取り替えてください。

警告：
RF 干渉

1. 本製品は Class A に分類されます。本製品は、家庭環境において無線干渉を起こす可能性があります。その場合、使用者は適切な処置を取らなければならないことがあります。

アーク灯の特性

1. 停電後または大きな電圧ディップ後にアーク灯を再点灯する場合は、しばらく時間をおくようにしてください。Lamp Power-Up State （L ON/ L OFF）システム設定によっては、温度が下がったときに自動的に再点灯される場合もあります。
2. アーク灯は点光源です。

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Introduction

Disclosure

This technical manual is confidential property of Vari-Lite, Inc. All information contained herein is the sole and exclusive property of Vari-Lite, Inc. and may not be used, disclosed, or reproduced in any manner without the prior written consent of Vari-Lite, Inc.

WARNING: It is important to read ALL accompanying safety instructions to avoid damage to the product and potential injury to yourself or others.

About This Manual

This manual provides descriptions, repair procedures, and illustrated parts breakdowns for all configurations of the VL1000™ ERS Luminaire. The manual is intended for use by Vari-Lite personnel and by Vari-Lite's customers/clients.

This manual covers the following models:

MODEL	PART NUMBER	SOURCE	SHUTTER	IRIS
VL1000 T	20.9663.0001.01	Incandescent		
VL1000 TS	20.9663.0001.02	Incandescent	X	
VL1000 TI	20.9663.0001.03	Incandescent		X
VL1000 A	20.9663.0001.11	Arc		
VL1000 AS	20.9663.0001.12	Arc	X	
VL1000 AI	20.9663.0001.13	Arc		X

Note: Performing maintenance procedures contained in this manual may void the product warranty. Refer to the Vari-Lite, Inc. Limited Warranty card included in the shipping package for this VARI*LITE® product.

Additional Documentation

A support webpage for VL1000 series luminaires is available at www.vari-lite.com (follow the Support link).

A user's manual is available for installation and operation of the VL1000 ERS luminaire. This manual is available in both printed and electronic (PDF) formats.

- VL1000™ ERS Luminaire User's Manual (02.9663.0001).

Customer Service

Our Goal

At Vari-Lite, we are committed to providing you the highest quality in customer service. Our comprehensive resources are available to help your business succeed and ensure you get the full benefit of being a Vari-Lite customer. Whether your needs are telephone/troubleshooting assistance, product training or technical service, our full-time staff of experienced professionals are on-hand to provide support.

How to Reach Us

For assistance in your area, call the dealer from which your product(s) were purchased.

or

Contact an Authorized Service Center.

or

Contact the Vari-Lite Customer Service Department, 9am - 6pm CST Monday through Friday, at the following:

phone: 1-877-VARI-LITE (1-877-827-4548)
fax: 214.630.5867
email: customerservice@vari-lite.com

Additional Resources

For additional resources and documentation, please visit our website at: www.vari-lite.com and follow the Support link.

Technical Bulletins and Notices

Technical bulletins concerning the latest changes to VARI*LITE equipment are issued from the Dallas, Texas USA office. They are documentation supplements that contain procedures for equipment upgrades, retrofits, and repairs not found in the existing manuals. Operator technical bulletins are also issued to document changes in control software. Technical bulletins are integrated into the appropriate equipment manuals as those manuals are revised. Bulletins are categorized by assembly or subassembly, and identified by a number such as S1K-001 (VL1000 series luminaires Technical Bulletin number 1).

Technical notices are also issued from the Dallas, Texas USA office. They are non-procedural documents that contain information regarding product support issues, current equipment problems, software bugs, and documentation corrections. All technical notices begin with the prefix TN and are numbered sequentially, such as TN-138 (Tech Notice number 138).

CHAPTER 1.

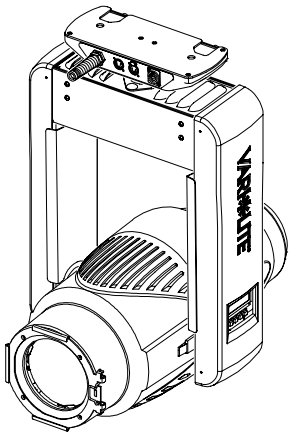
Description

This chapter provides an overview of luminaire features, components and operations.

- **Features**
- **Component Descriptions**
- **Principles of Operation**

Features

Standard Features



VL1000 Ellipsoidal Reflector Spotlight (ERS) luminaires have the following standard features:

- Automated zoom optics system.
- Crossfading CYM color system.
- Diffusion system.
- Six-position rotating gobo wheel (five rotatable, indexable gobo positions and one open gobo position).
- Repositional pan/tilt system.
- Control by DMX512 protocol.

Model Specific Features

Each individual configuration has the following specific features:

VL1000 T Luminaire (20.9663.0001.01)

- 1000W Tungsten Halogen lamp source.

VL1000 TS (20.9663.0001.02)

- 1000W Tungsten Halogen lamp source.
- Four-blade shutter framing system.

VL1000 TI Luminaire (20.9663.0001.03)

- 1000W Tungsten Halogen lamp source.
- Beam-size iris mechanism.

VL1000 A (20.9663.0001.11)

- 575W arc lamp source with external ballast unit.

VL1000 AS (20.9663.0001.12)

- 575W arc lamp source with external ballast unit.
- Four-blade shutter framing system.

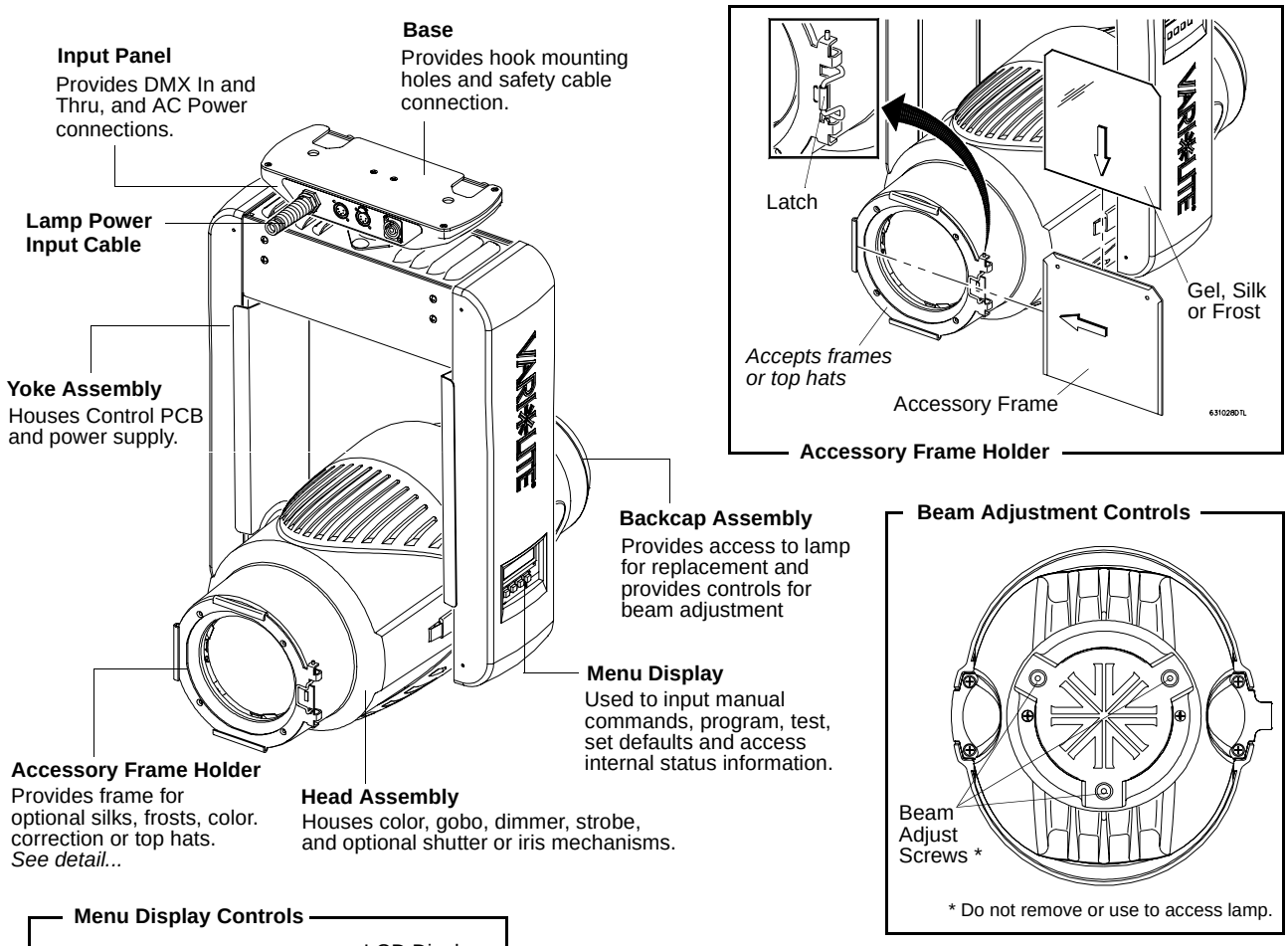
VL1000 AI (20.9663.0001.13)

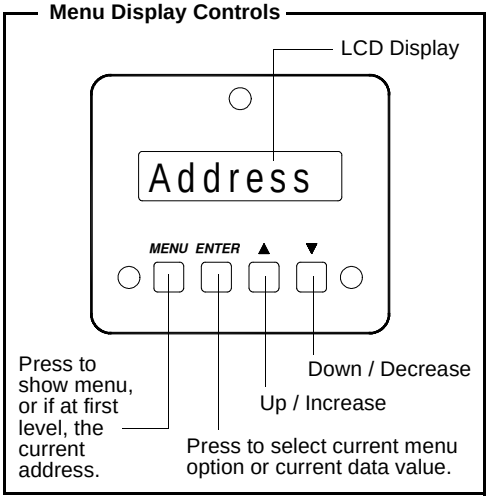
- 575W arc lamp source with external ballast unit.
- Beam-size iris mechanism.

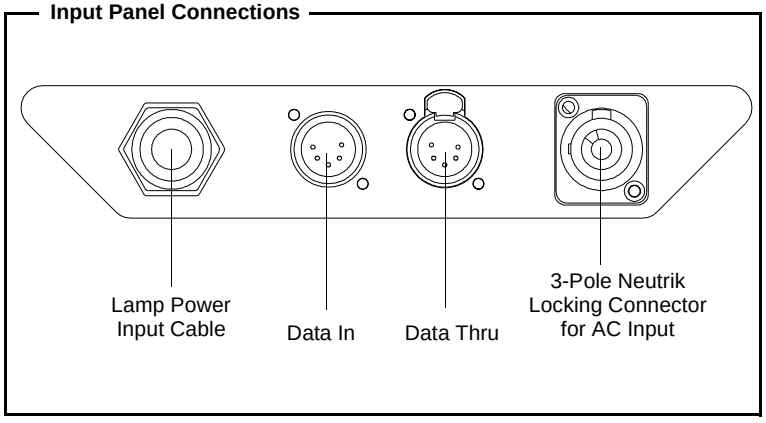
Component Descriptions

External Luminaire Components

The following illustration shows the external luminaire components and controls.


Input Panel
Provides DMX In and Thru, and AC Power connections.
Base
Provides hook mounting holes and safety cable connection.
Lamp Power Input Cable
Yoke Assembly
Houses Control PCB and power supply.
Backcap Assembly
Provides access to lamp for replacement and provides controls for beam adjustment
Menu Display
Used to input manual commands, program, test, set defaults and access internal status information.
Accessory Frame Holder
Provides frame for optional silks, frosts, color. correction or top hats. See detail...
Head Assembly
Houses color, gobo, dimmer, strobe, and optional shutter or iris mechanisms.
VARI*LITE


Menu Display Controls
LCD Display
Address
MENU ENTER ▲ ▼
Press to show menu, or if at first level, the current address.
Down / Decrease
Up / Increase
Press to select current menu option or current data value.

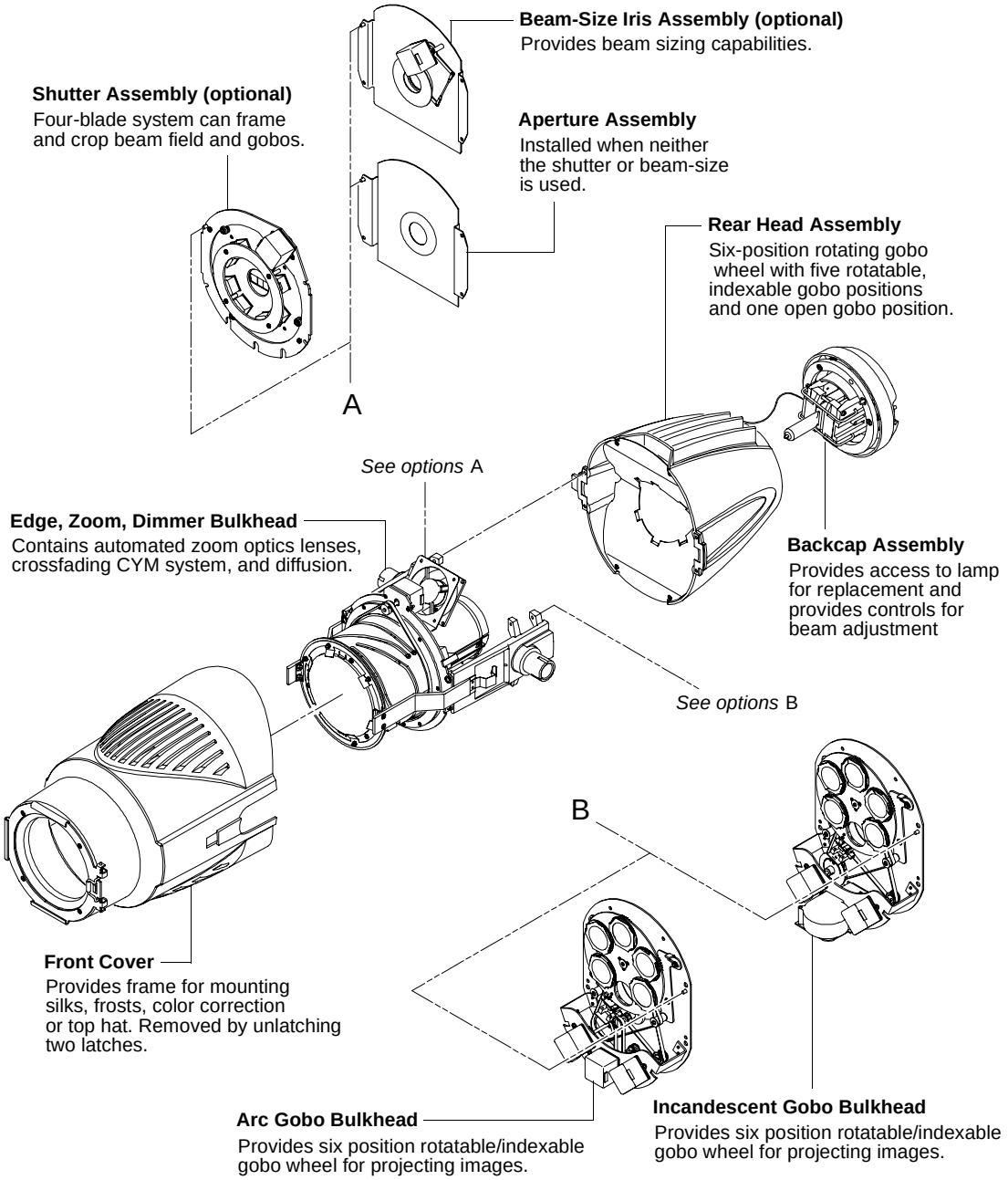


Luminaire Internal Head Components

The following illustration shows the major sub-assemblies which are located in the luminaire head assembly.

A **options** - Shutter, Beam-size Iris or Aperture bulkhead is dependent on model.

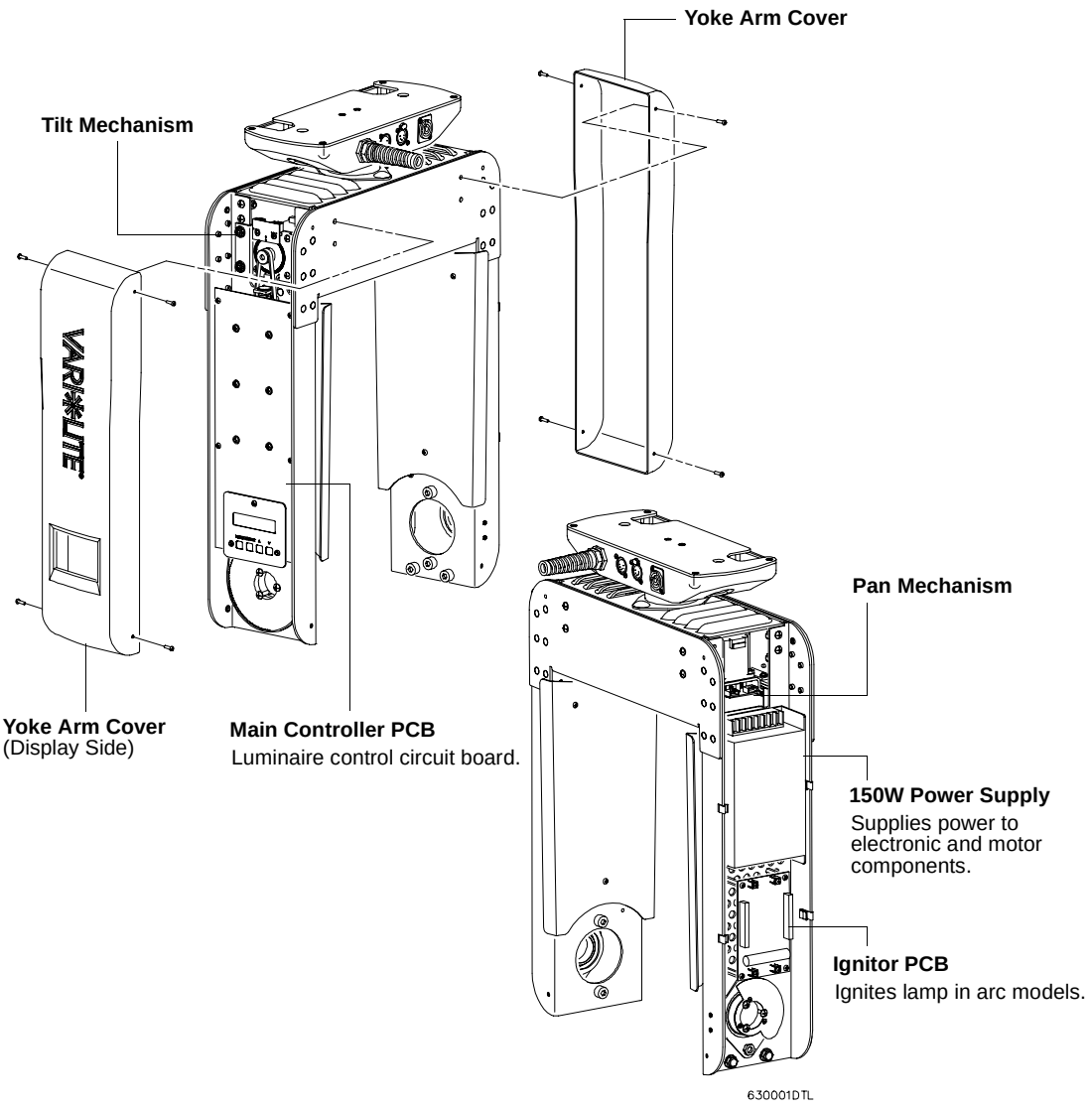
B **options** - Rotating Gobo Bulkhead version is dependent on model.


Beam-Size Iris Assembly (optional)
Provides beam sizing capabilities.
Shutter Assembly (optional)
Four-blade system can frame and crop beam field and gobos.
Aperture Assembly
Installed when neither the shutter or beam-size is used.
Rear Head Assembly
Six-position rotating gobo wheel with five rotatable, indexable gobo positions and one open gobo position.
A
See options A
Edge, Zoom, Dimmer Bulkhead
Contains automated zoom optics lenses, crossfading CYM system, and diffusion.
Backcap Assembly
Provides access to lamp for replacement and provides controls for beam adjustment
See options B
B
Front Cover
Provides frame for mounting silks, frosts, color correction or top hat. Removed by unlatching two latches.
Arc Gobo Bulkhead
Provides six position rotatable/indexable gobo wheel for projecting images.
Incandescent Gobo Bulkhead
Provides six position rotatable/indexable gobo wheel for projecting images.

Luminaire Internal Yoke Components

The following illustration shows the major sub-assemblies which are located in the luminaire yoke assembly.

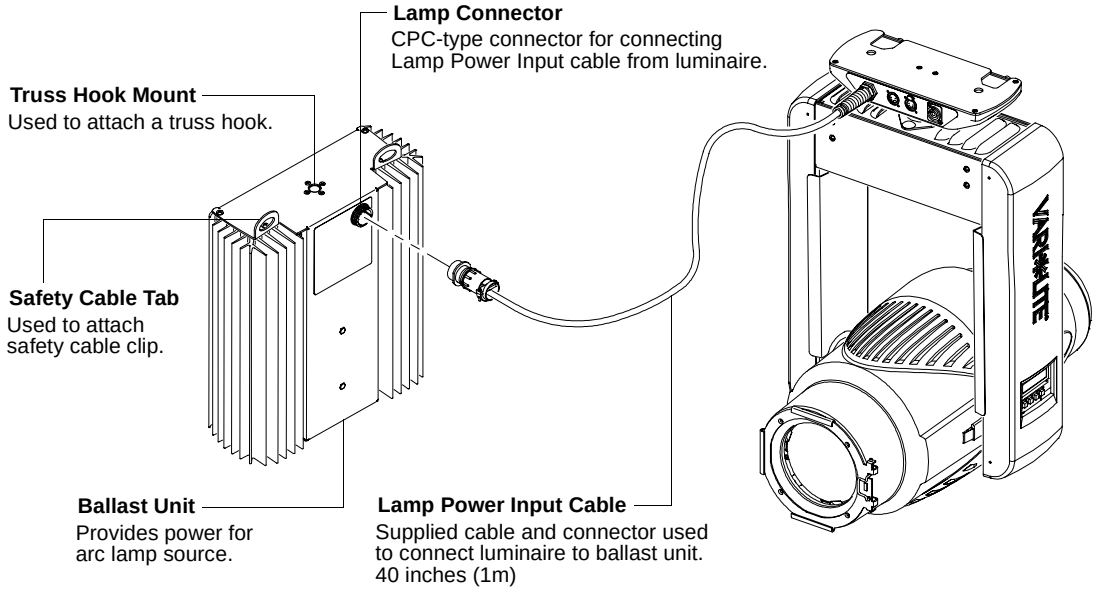
Note: Head assembly not shown for clarity.



Arc Ballast Unit

An external ballast unit is included with VL1000 arc models. In this case, the lamp power input cable is already connectorized for use with this unit.

The following illustration shows the external arc ballast components.

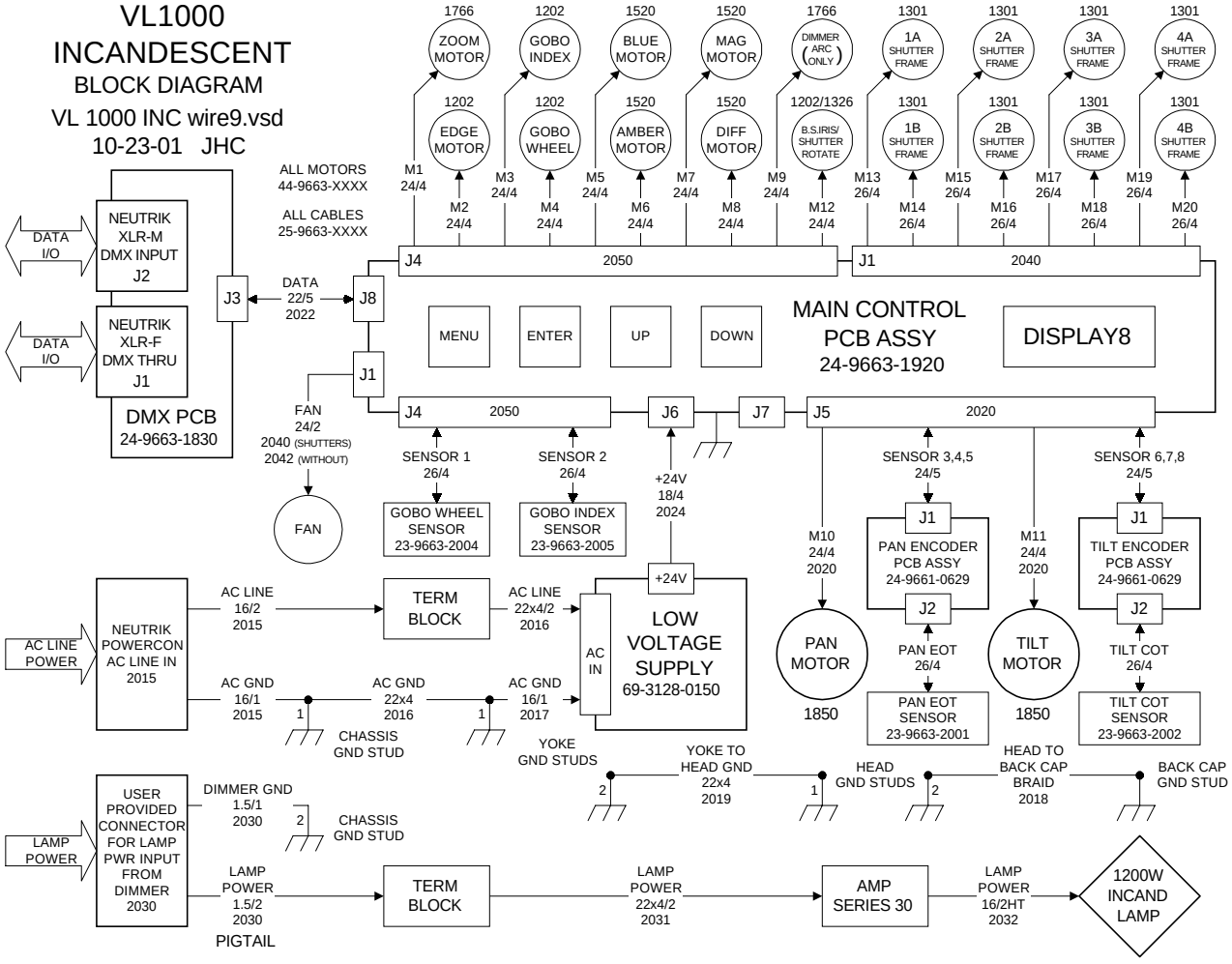

Lamp Connector
CPC-type connector for connecting Lamp Power Input cable from luminaire.
Truss Hook Mount
Used to attach a truss hook.
Safety Cable Tab
Used to attach safety cable clip.
Ballast Unit
Provides power for arc lamp source.
Lamp Power Input Cable
Supplied cable and connector used to connect luminaire to ballast unit. 40 inches (1m)

Note: The Lamp Power Input Cable has conductors for lamp power and ballast control. It is not compatible with VARI✳LITE Series 300™ lamp runs.

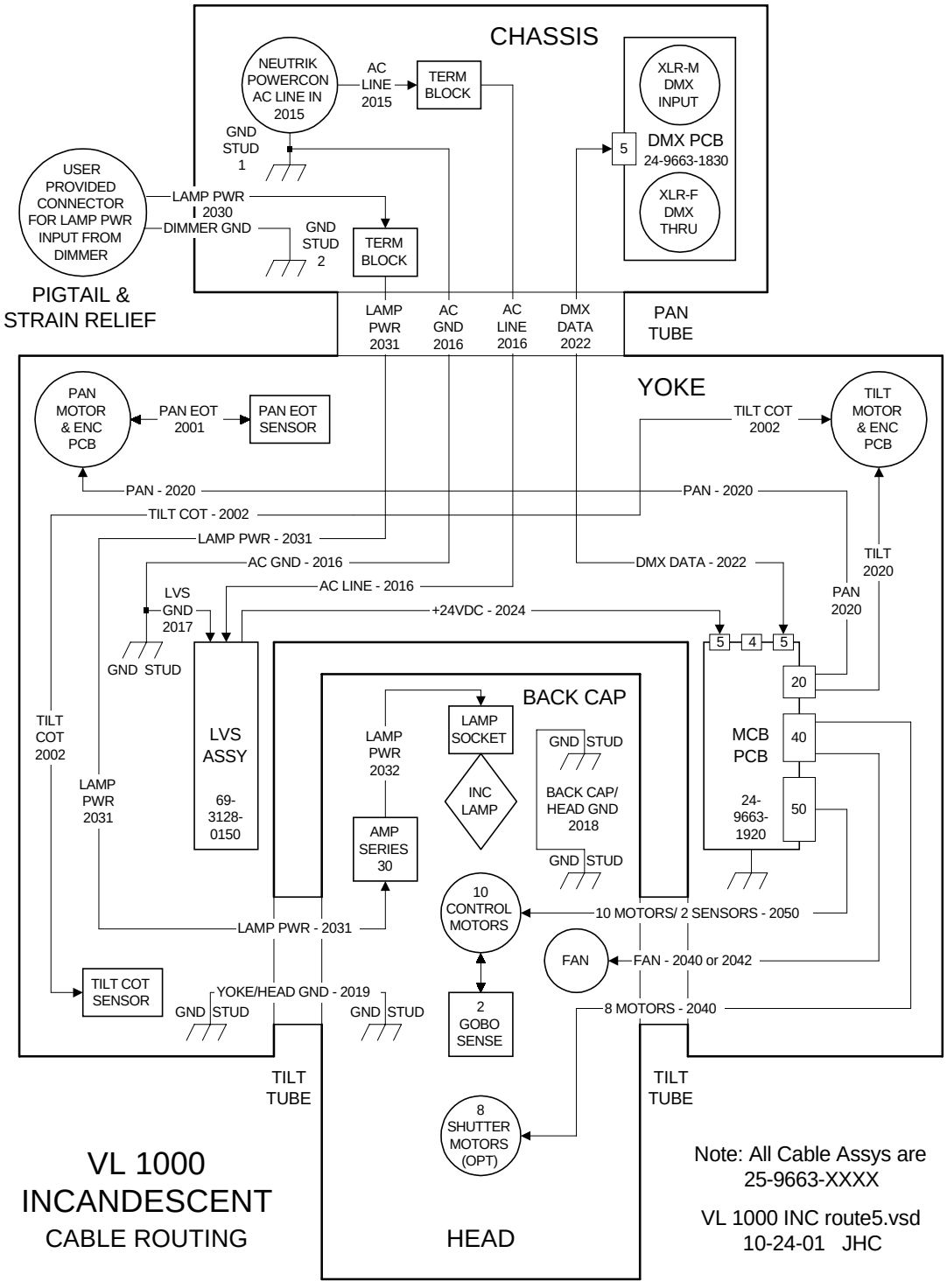
Principles of Operation

VL1000 Incandescent Source Luminaire

VL1000 Incandescent Block Diagram

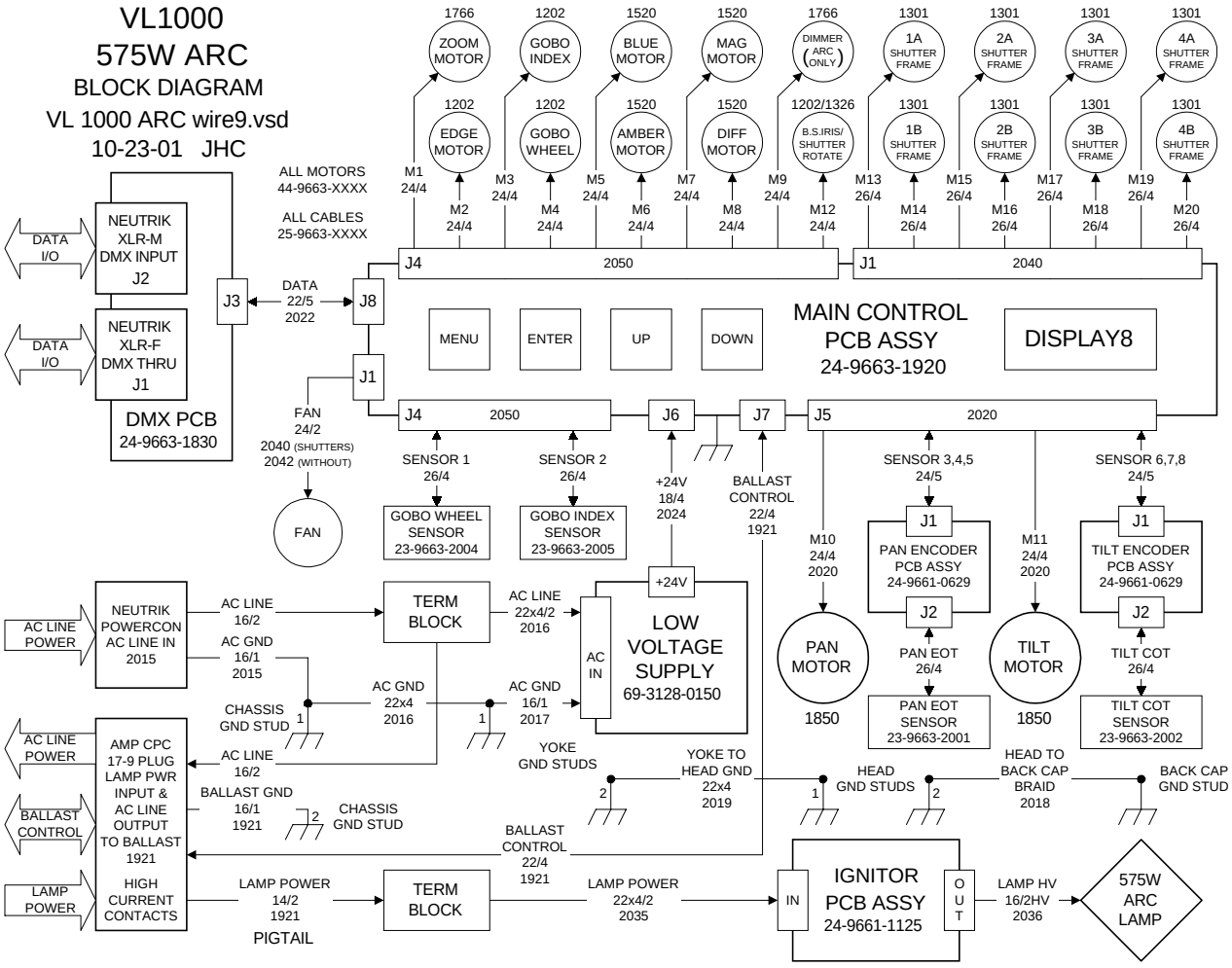


VL1000 Incandescent Cable Routing

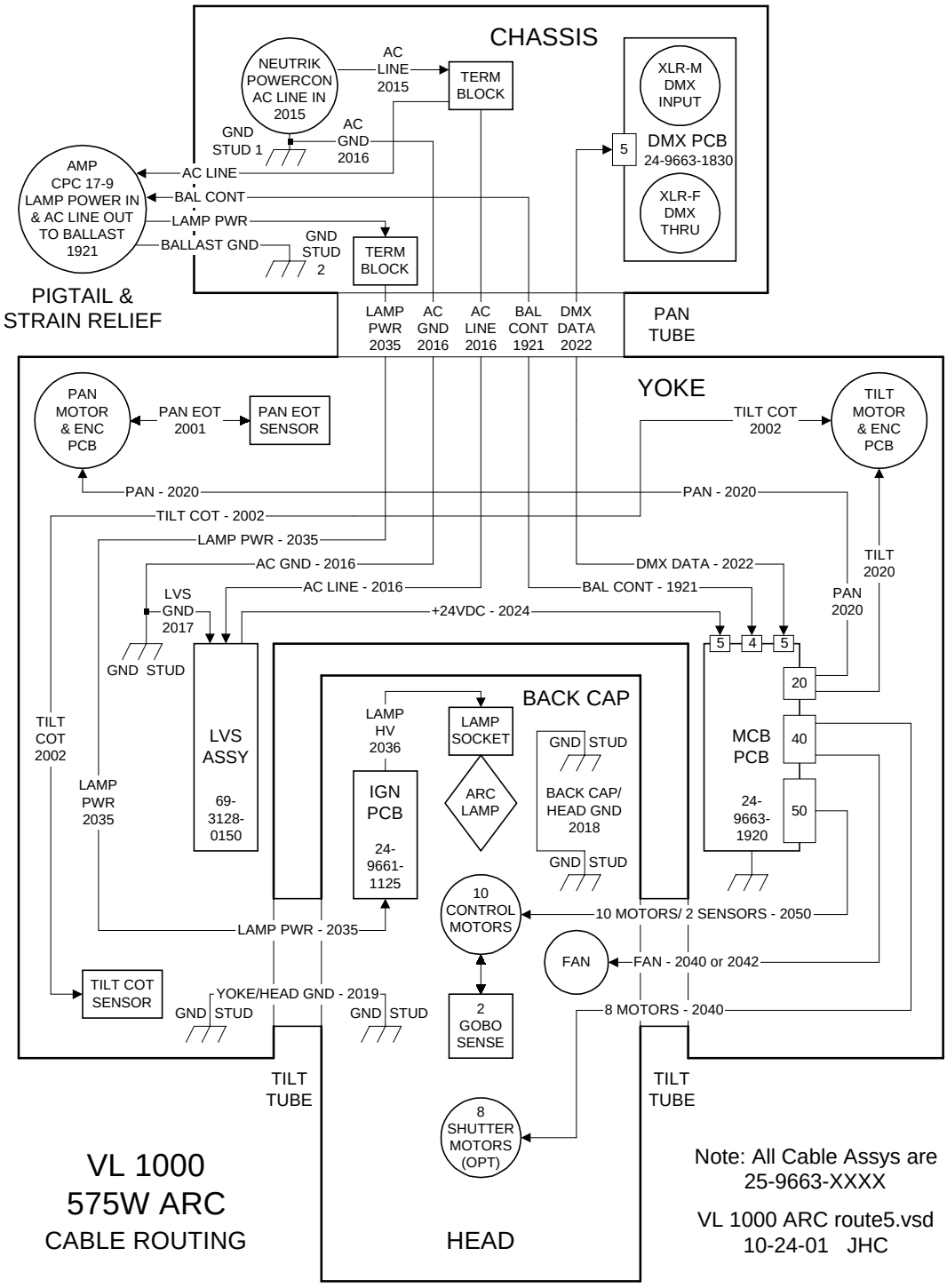


VL1000 575W Arc Source Luminaire

VL1000 Arc Block Diagram

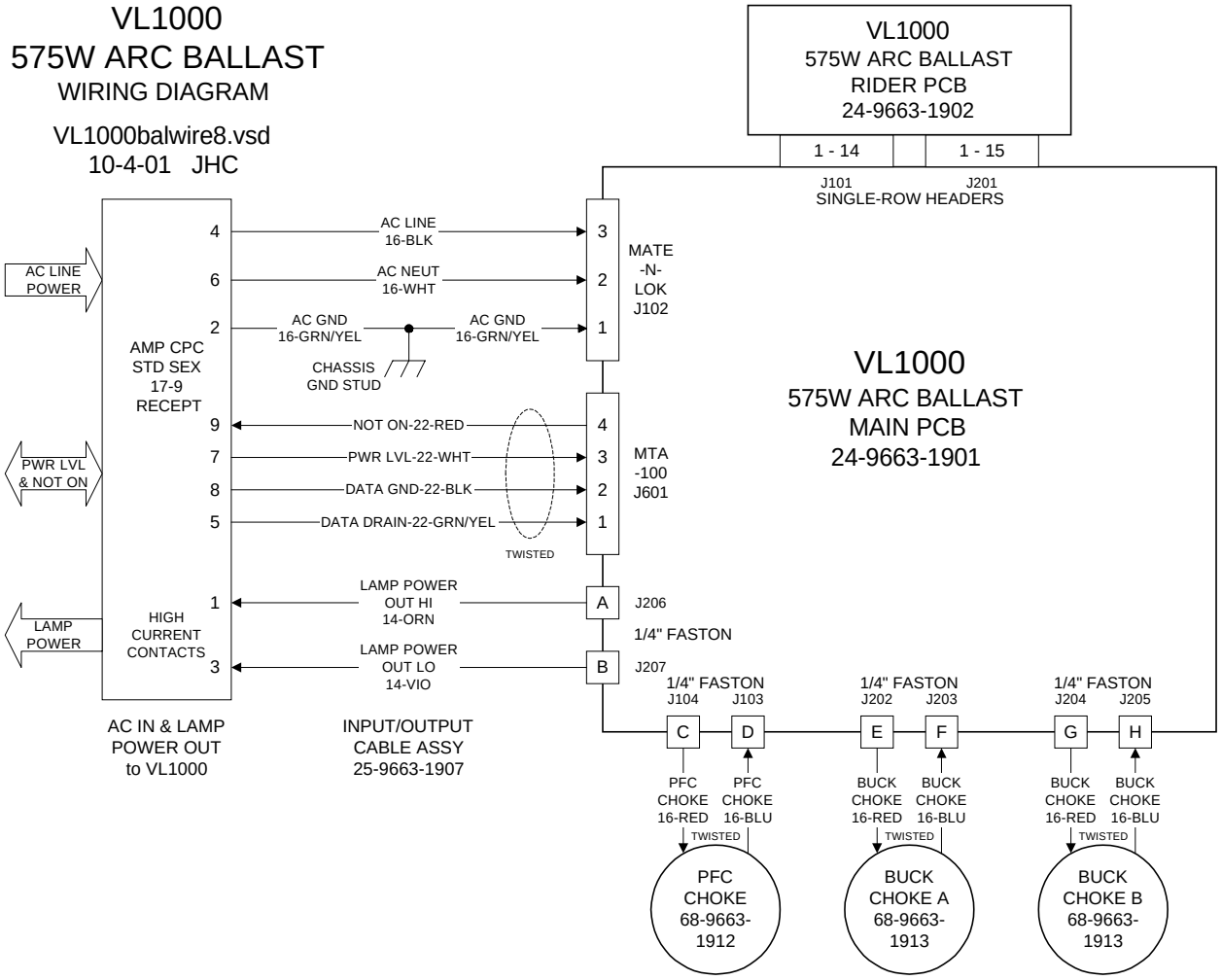


VL1000 Arc Cable Routing



VL1000 Arc Ballast Unit

Ballast Block Diagram



Notes

CHAPTER 2.

Maintenance

This chapter contains test, service, and standard maintenance procedures.

- **Testing**
- **Maintenance Procedures**

WARNING: All maintenance procedures are to be performed with power removed from the luminaire. Never remove cover or backcap while lamp is in operation.

Testing

Running Parameter Tests

The luminaire is capable of running self tests by using the **TEST** menu functions.

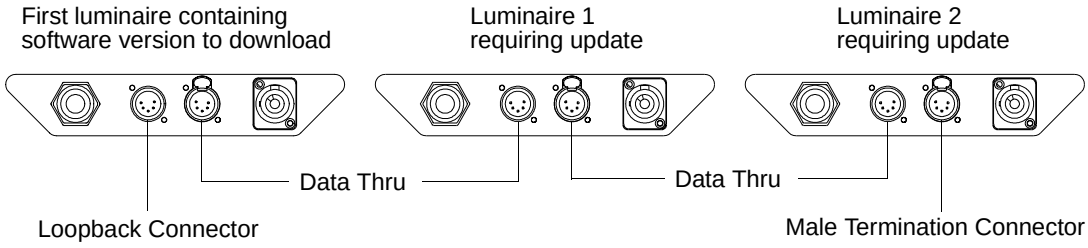
When running tests on multiple luminaires, a loopback connector is required at the master luminaire (first in link) and a male termination connector is required at the last luminaire in the link. Refer to the VL1000 ERS User's Manual for more information regarding these connectors.

Note: After 10 seconds of inactivity, the menu display will change to the default state showing the address.

To connect luminaires for simultaneous testing:

Step 1. At first luminaire in link, install loopback connector into DATA IN XLR connector.

Step 2. At last luminaire, install male termination connector into DATA THRU XLR connector.



Step 3. At master luminaire Menu Display, press [Menu].

Movement Disable

The **Movement** option has been added to the configuration menu. This allows for pan/tilt functions to be disabled so that the luminaire can be placed in any position for testing without movement occurring. In order to regain full control of the luminaire, **Movement** will need to be enabled after testing.

Note: When setting the **Movement** option to disable, luminaires linked by a loopback connector will have pan and tilt disabled for all the luminaires that are linked.

WARNING: Backcap and adjustment knobs will be HOT during lamp operation. Wear gloves and/or use tools to prevent burns.

To run tests:

Step 1. Press [Menu].

Step 2. Press [Up] / [Down] arrows until **Test** appears. Press [Enter].

Step 3. Use [Up] / [Down] arrows to select a parameter to test. Refer to table below for a complete list of test parameters.

Step 4. Press [Enter] to run test.

Step 5. Press [Menu] to stop test at any time.

Table 2-1: Self Test Function Chart

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Test *System Test*	**ALL** *Test All Motors*	**RUN TEST** *Run-Test in Progress*	Press [Menu] to stop tests	
	Pan/Tilt	**RUN TEST** *Run-Test in Progress*		
	Dimmer *(Arc Only)*	**RUN TEST** *Run-Test in Progress*		
	Blue	**RUN TEST** *Run-Test in Progress*		
	Amber	**RUN TEST** *Run-Test in Progress*		
	Magenta	**RUN TEST** *Run-Test in Progress*		
	ColorMix *Blue, Amber, Magenta test*	**RUN TEST** *Run-Test in Progress*		
	Diffusn *Diffusion Test*	**RUN TEST** *Run-Test in Progress*		
	Rot Gobo *Rotating Gobo Test*	**RUN TEST** *Run-Test in Progress*		
	Edge	**RUN TEST** *Run-Test in Progress*		
	Zoom	**RUN TEST** *Run-Test in Progress*		
	Beam *(If Beam-Size Iris Accessory)*	**RUN TEST** *Run-Test in Progress*		
	Shutter *(If Shutter Accessory)*	**RUN TEST** *Run-Test in Progress*		
	Rot Shut *(If Shutter Accessory)*	**RUN TEST** *Run-Test in Progress*		
	Lamp *Disables Pan/Tilt and executes Home position.*	**RUN TEST** *Run-Test in Progress*		
	Encoder *Encoders*	**Pan** *Pan Encoder*	**XXXX** *Data*	
		Tilt *Tilt Encoder*	**XXXX** *Data*	
	Sensor *Sensors*	**Pan** *COT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**
		Tilt *COT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**
		Rot Gobo *Gobo Select EOT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**
		GoboIndx *Gobo Index EOT Sensor*	**STST** *Sensor Test in Progress*	**PASS/FAIL**

Maintenance Procedures

Lamp Replacement (Incandescent Model)

Parts:

1000 WATT INCANDESCENT LAMP, 100 VAC (71.2552.0100) - T/TS/TI
1000 WATT INCANDESCENT LAMP, 115 VAC (71.2552.0115) - T/TS/TI
1000 WATT INCANDESCENT LAMP, 230 VAC (71.2552.0230) - T/TS/TI

Tools:

#2 Phillips screwdriver, cotton gloves

CAUTION: Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use alcohol and cotton cloth to thoroughly clean glass portion of lamp.

To install incandescent lamp:

Step 1. Remove power from luminaire.

Step 2. At backcap, gradually loosen two 10-32x2-3/8" PPSS black screws (**Figure 2-1**) a few turns at a time until backcap is free. (Screws must be alternately loosened to prevent one side from locking up.)

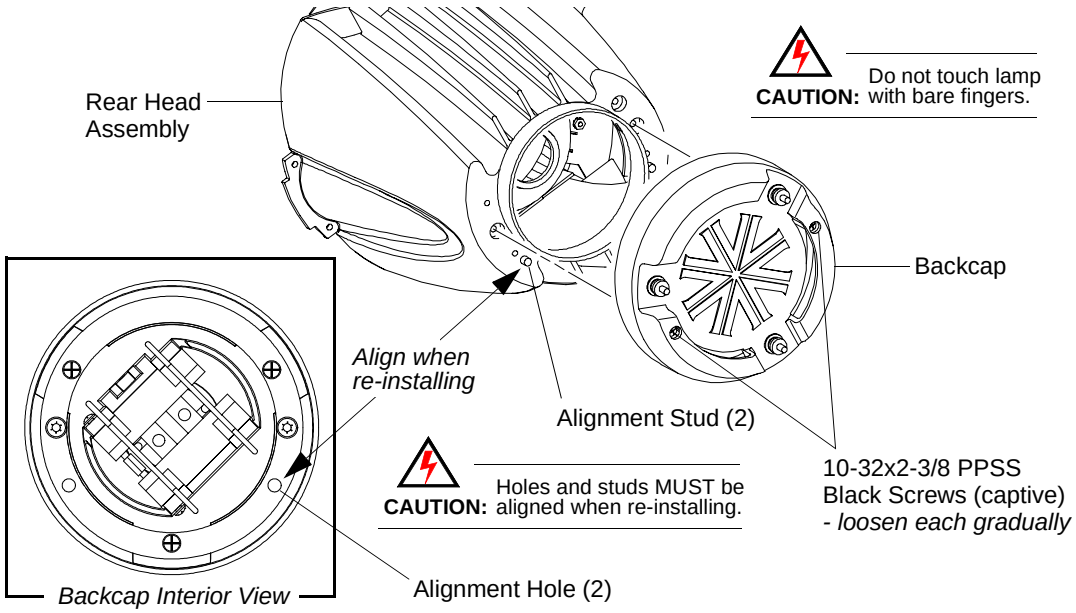

Rear Head Assembly
CAUTION: Do not touch lamp with bare fingers.
Backcap
Align when re-installing
Alignment Stud (2)
CAUTION: Holes and studs MUST be aligned when re-installing.
10-32x2-3/8 PPSS Black Screws (captive) - loosen each gradually
Backcap Interior View
Alignment Hole (2)

Figure 2-1: Removing Incandescent Backcap

Step 3. Carefully pull backcap straight out of rear head assembly. (It will still be attached by lamp wires and tether.)

Step 4. At backcap, flip two bail clamps outward (**Figure 2-2**).

Step 5. Flip two base clamps outward away from socket.

Step 6. Grip lamp by base and firmly install in socket.

Step 7. Close base and bail clamps, locking into place.

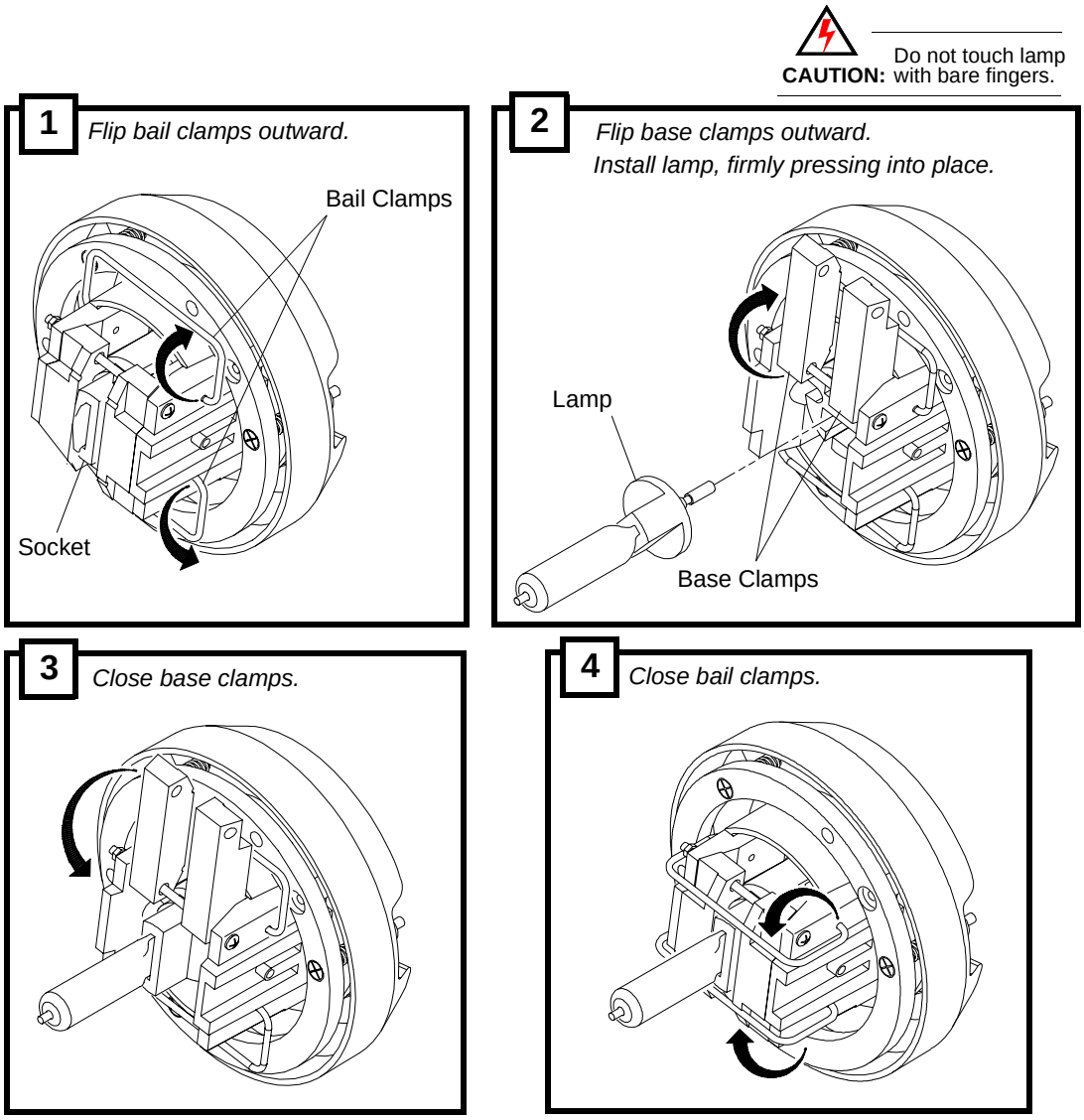


Figure 2-2: Installing Incandescent Lamp in Socket

Step 8. Re-install backcap, ensuring that alignment studs and holes are aligned (**Figure 2-1**).

Step 9. Align lamp. (Refer to "Align Lamp For Maximum Beam Irradiance" on page 22.)

Lamp Replacement (Arc Model)

Parts:

575 WATT ARC LAMP, MSR575HR (71.2528.0575) - A/AS/AI

Tools:

#2 Phillips screwdriver, cotton gloves

CAUTION: Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use alcohol and cotton cloth to thoroughly clean glass portion of lamp.

To install arc lamp:

Step 1. Remove power from luminaire.

Step 2. At backcap, gradually loosen two 10-32x2-3/8" PPSS black screws (**Figure 2-3**) a few turns at a time until backcap is free. (Screws must be alternately loosened to prevent one side from locking up.)

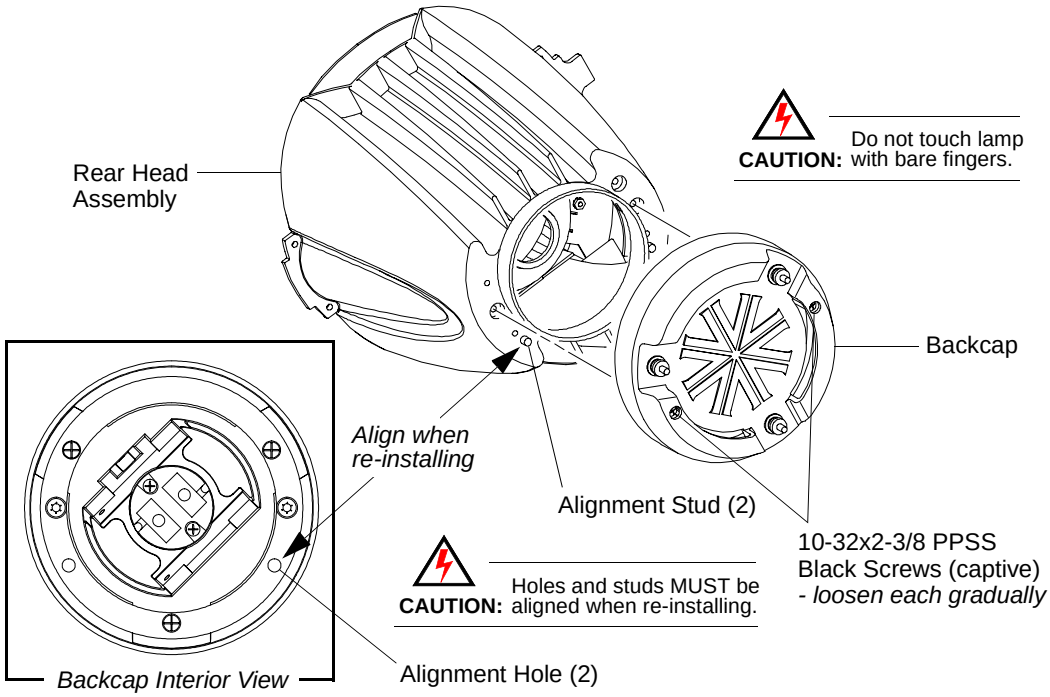

Rear Head Assembly
CAUTION: Do not touch lamp with bare fingers.
Backcap
Align when re-installing
Alignment Stud (2)
10-32x2-3/8 PPSS Black Screws (captive) - loosen each gradually
CAUTION: Holes and studs MUST be aligned when re-installing.
Alignment Hole (2)
Backcap Interior View

Figure 2-3: Removing Arc Backcap

Step 3. Grip lamp by base and firmly install in socket (**Figure 2-4**).

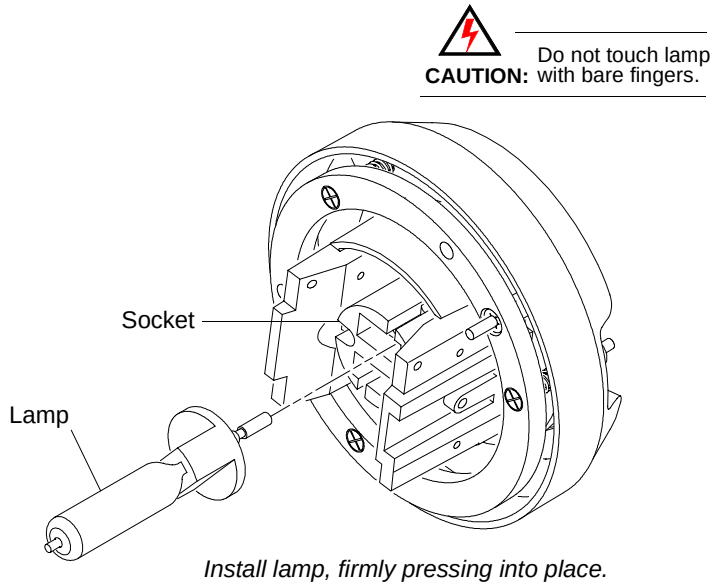


Figure 2-4: Installing Arc Lamp in Socket

Step 4. Re-install backcap, ensuring that alignment studs and holes are aligned (**Figure 2-3**).

Step 5. Align lamp. (Refer to "Align Lamp For Maximum Beam Irradiance" on page 22.)

Align Lamp For Maximum Beam Irradiance

After a new lamp is installed in either the incandescent or arc version of the luminaire, it will be necessary to align the lamp to optimize the beam.

Tools:

#2 Phillips screwdriver

WARNING: Backcap and adjustment screws will be HOT during lamp operation. Wear gloves and/or use tools to prevent burns.

To align lamp:

Step 1. Set intensity to 100%.

Step 2. Position beam on a white wall at a distance of 10 to 20 feet.

Step 3. Using console or internal luminaire menu controls, set zoom to zero and focus to a hard edge. If installed, be sure that beam-size iris and shutters are open.

Step 4. Using three adjustment screws, adjust hot spot to center of beam (**Figure 2-5**).

Step 5. Check color uniformity as follows:

a. Position one of the color stages at 30% of maximum. (Cyan or Magenta work best.)

b. Verify that beam color is uniform (if lamp is misaligned, color will be concentrated to one side of beam). If color is not uniform, readjust lamp until color is uniform across entire beam field.

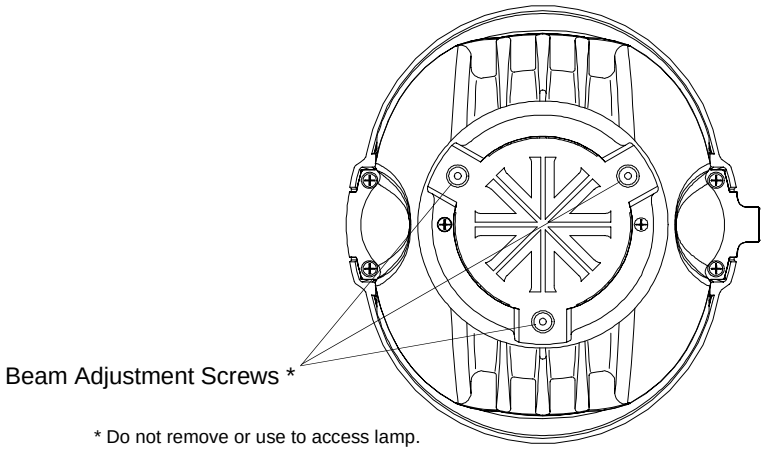


Figure 2-5: Lamp Alignment Screws

Frame or Top Hat Replacement

An accessory frame holder is provided for the addition of a top hat or gel frame with silks, frosts or color correction if required. The frame holder is designed to fit a standard 8-inch gel frame or top hat.

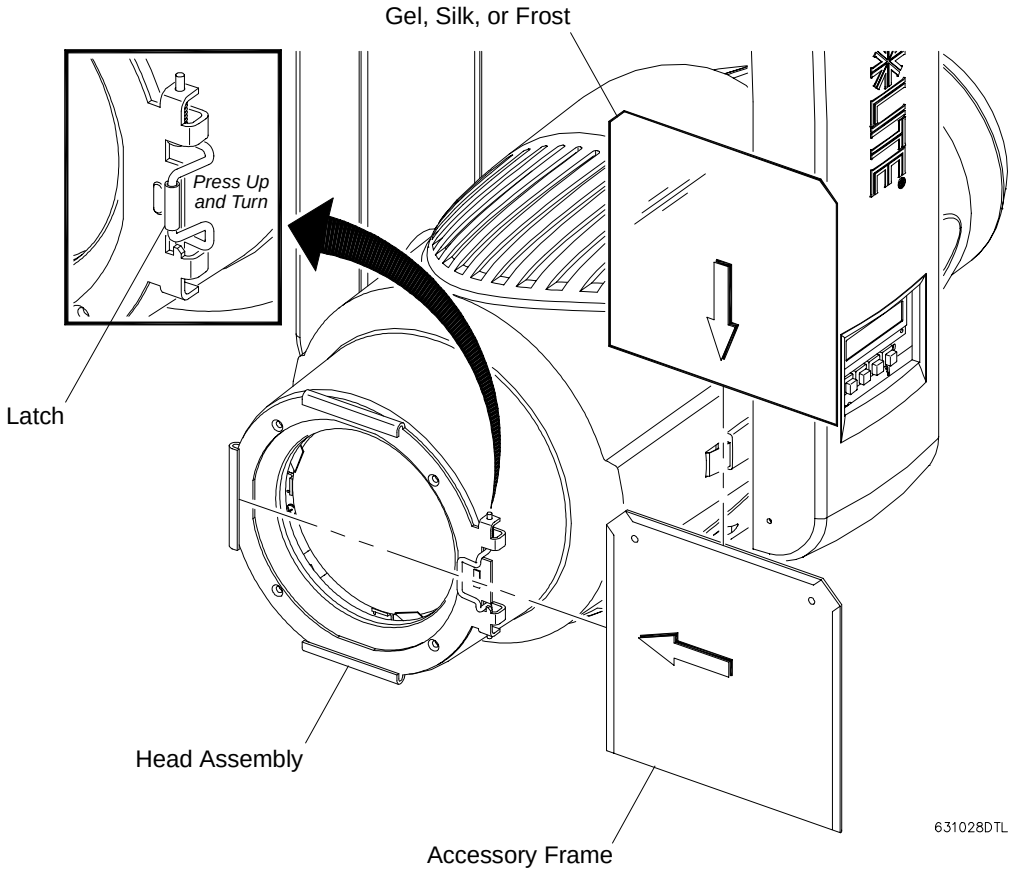
To remove and replace frame or top hat:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. At front lens, press upward on accessory frame latch and turn to open.

Step 3. Remove frame/top hat, if any (**Figure 2-6**).

Step 4. Install frame/top hat and close latch.



NOTE:
The accessory frame is not a Vari-Lite accessory.

Figure 2-6: Installing a Frame or Top Hat

Front Cover Removal

Parts:

ASSY, FRONT COVER (22.9663.1038)

Tools:

#2 Phillips screwdriver

To remove and replace front cover:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. At head assembly, press in front cover latches to release (**Figure 2-7**).

Step 3. Pull cover straight out until stopped by tether.

Step 4. Disconnect tether by removing 8-32x1/2" PFB screw and 8-32 Keps nut as shown.

Step 5. Remove cover.

Step 6. Replace front cover by doing steps 2 through 5 in reverse. *Ensure latches lock into place.*

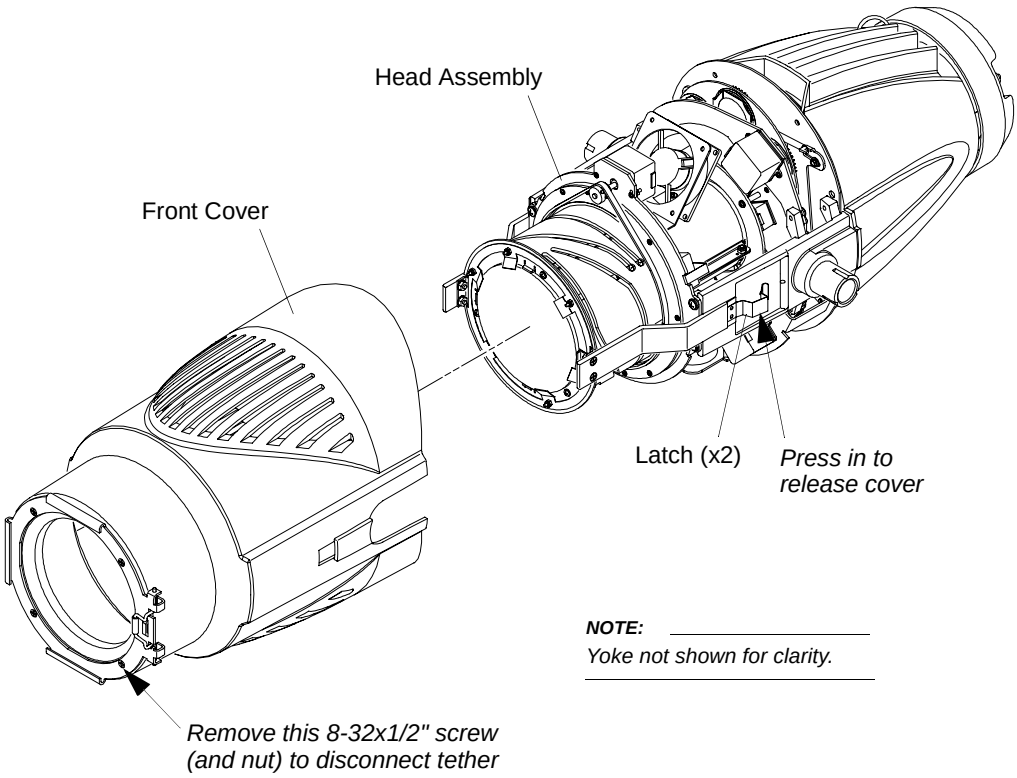


Figure 2-7: Front Cover Removal/Replacement

Rear Head Assembly Removal

This procedure is necessary in order to access some components such as the gobo wheel bulkhead and shutter assembly. Refer to as needed.

Tools:

#2 Phillips long handle screwdriver

To remove rear head assembly:

Step 1. Disconnect luminaire AC input cable from power source.

CAUTION: The rear head assembly is heavy and will remain attached by lamp wires. Place luminaire on tech bench before removing rear assembly.

Step 2. At side rails, remove four 10-32x5/8" PPB screws and #10 split lock washers (**Figure 2-8**). (Side rail spacers will come loose also.)

Step 3. Pull rear head assembly away from front head assembly.

Step 4. Re-install by doing steps 2 and 3 in reverse.

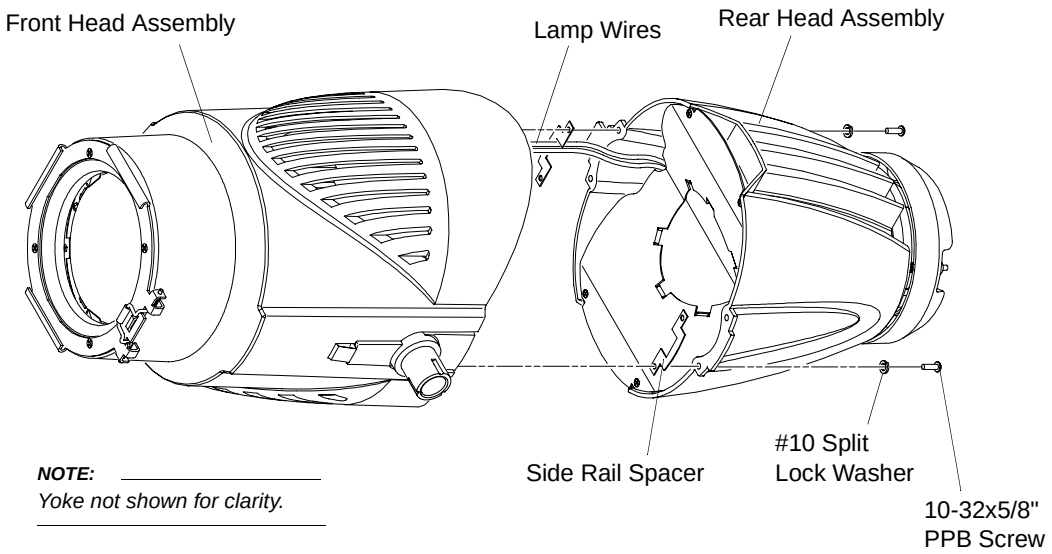


Figure 2-8: Rear Head Assembly Removal and Replacement

Rotating Gobo Replacement

WARNING: Remove power from luminaire before performing maintenance. Gobos may be HOT after operation. Allow to cool before replacing.

To replace a rotating gobo:

Step 1. Remove power from luminaire.

Step 2. At either side of head assembly, press in front cover latch and pull cover straight back until stopped by tether (**Figure 2-7**).

Step 3. Rotate gobo wheel until required gobo position is accessible at finger access cutout (**Figure 2-9**).

Step 4. Rotate gobo gear until open end of carrier is upward.

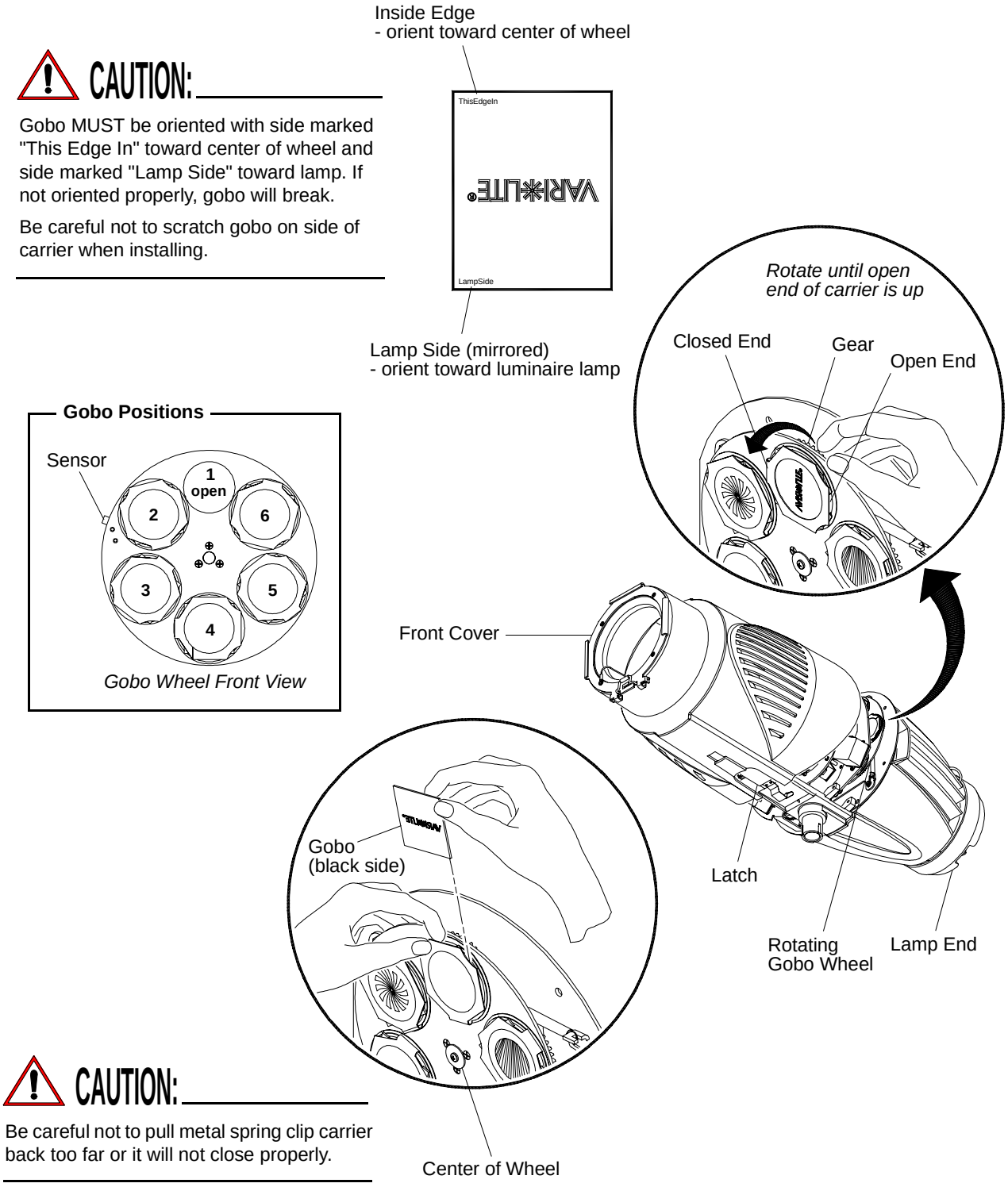
CAUTION: Do not touch gobos with bare fingers. Wear cotton gloves or other covering while replacing. Clean with glass cleaner and soft cloth if required.

CAUTION: Do not pull metal spring clip carrier back too far or it will not close properly.

Step 5. If applicable, carefully pull current gobo up and out of carrier. *Gobo can be easily scratched on sides of carrier if not careful.*

Step 6. Carefully install new gobo, orienting side marked "This Edge In" toward center of gobo wheel and side marked "Lamp Side" (mirror finish) toward lamp. *Gobo can be easily scratched on sides of carrier if not careful.* Ensure gobo is firmly set in carrier grooves.

Step 7. Re-install front cover.



CAUTION:

Gobo MUST be oriented with side marked "This Edge In" toward center of wheel and side marked "Lamp Side" toward lamp. If not oriented properly, gobo will break.

Be careful not to scratch gobo on side of carrier when installing.

CAUTION:

Be careful not to pull metal spring clip carrier back too far or it will not close properly.

Figure 2-9: Rotating Gobo Replacement/Cleaning

Gobo Index Timing Belt Alignment

The index timing belt (54.9663.1220) must be aligned so that the mechanism "clocks" properly. This belt is installed around the index gear and top gear of the gobo wheel (refer to **Figure 2-11**). The wheel position belt (54.2045.0001) is installed around the wheel position gear and bottom gear of the gobo wheel, and does not require alignment. Each belt is also routed around one pulley as shown in **Figure 2-11**.

Note: The alignment procedure is the same for both arc and incandescent versions.

Use the following procedure to re-align the index timing belt in the event it slips or the gobo wheel is removed from the bulkhead. (This procedure assumes that the wheel has been removed from the bulkhead assembly. If you are simply re-aligning the belt, Step 2 can be skipped.)

To align index timing belt:

Step 1. At large gear, align one of belt's *clock marks* with small groove at inside of gear. The *clock marks* will either be two ridges (newer belts) or one ridge and one red mark (older belts).

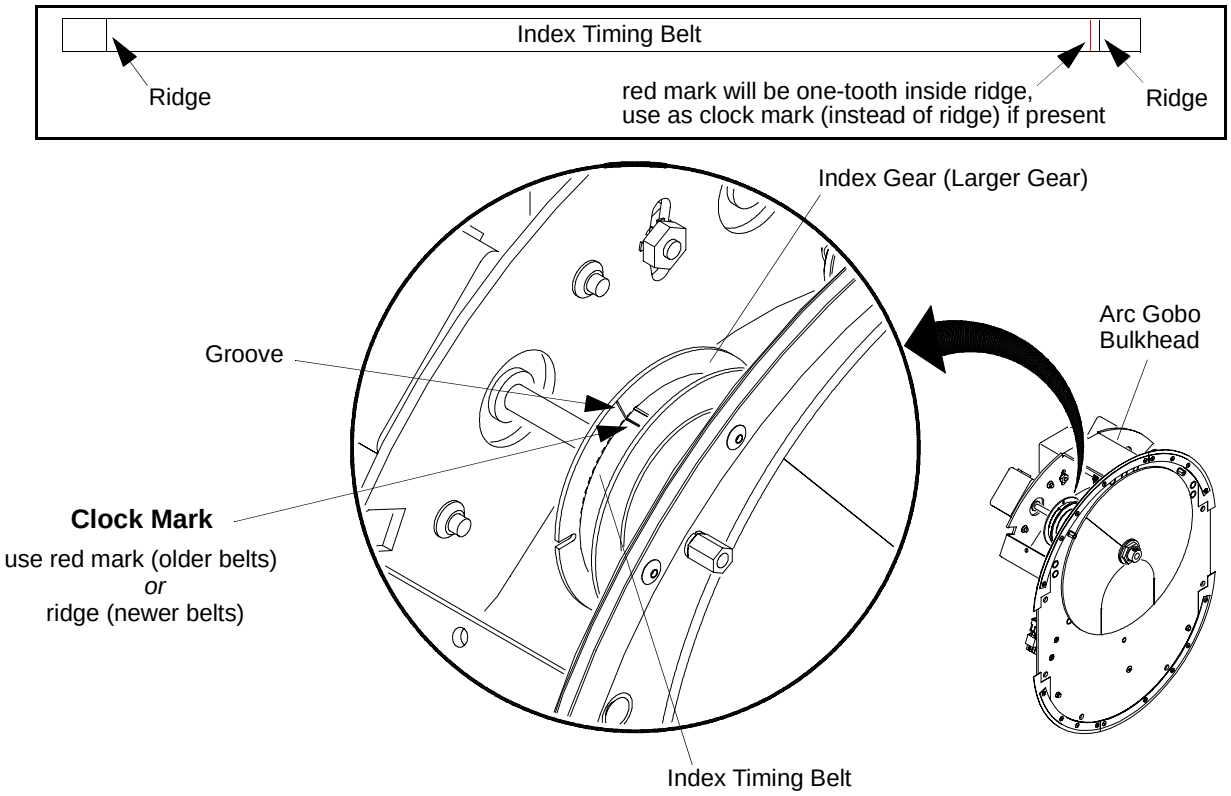


Figure 2-10: Aligning Index Gear Groove and Clock Mark

Step 2. If applicable, lower gobo wheel into place over rotating shaft, fitting wheel position belt around lower gear and index timing belt around top gear. Install 4-40x1/4 " PPZ screw, split lock washer, flat black washer and flat Teflon washer to secure gobo wheel in place. (Belt tension is automatically set by springs of pivot mechanism.)

Step 3. Orient gobo wheel so that notch of gobo wheel gear aligns with small ridge found on index timing belt.

Step 4. Re-check alignment of *clock mark* with groove of index gear. Adjust as necessary until marks are perfectly aligned at both gears.

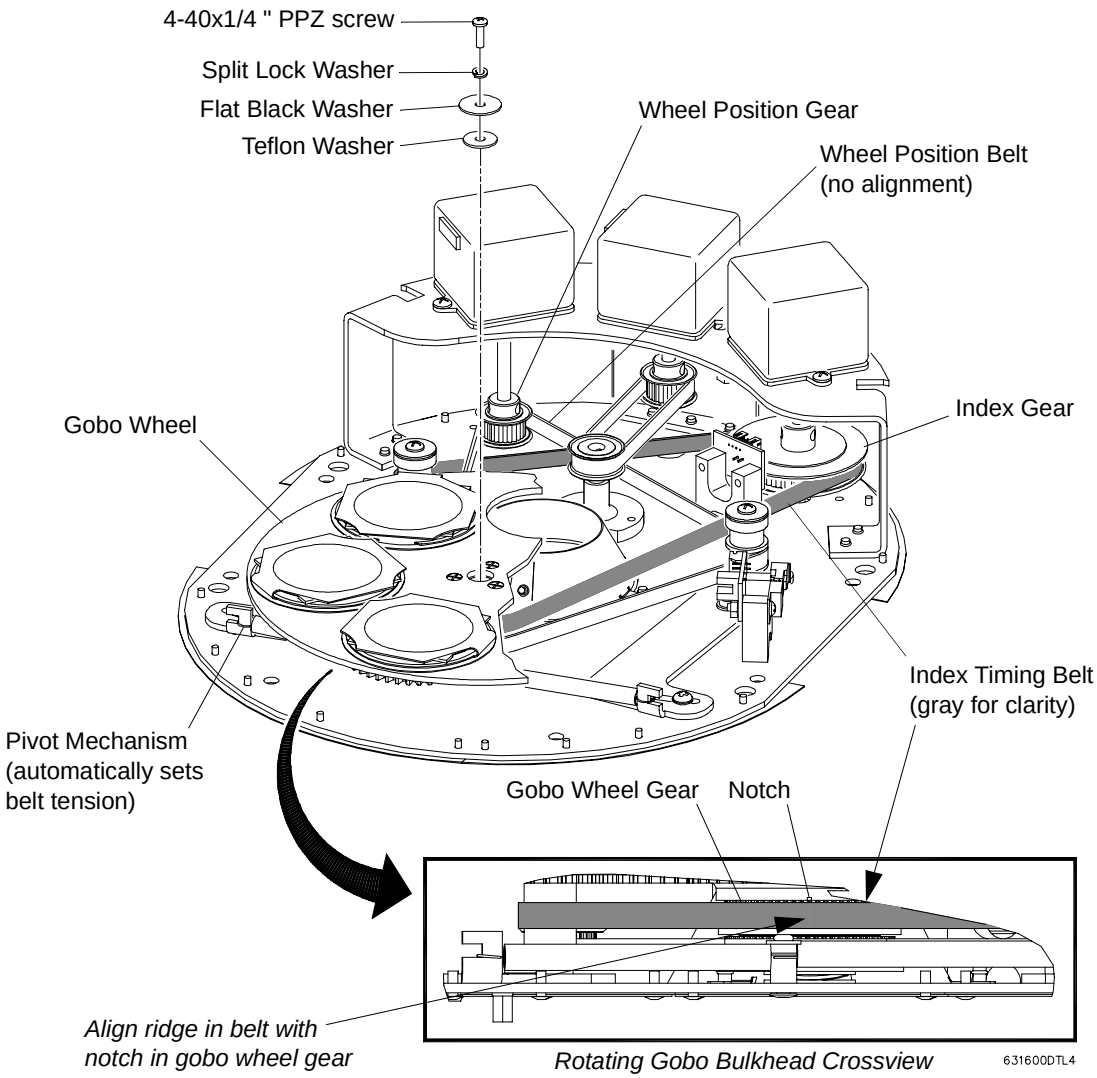


Figure 2-11: Aligning Second Clock Mark

Gobo Wheel Bulkhead Replacement

Parts:

ASSEMBLY, GOBO BULKHEAD INCANDESCENT (21.9663.1200) - T/TS/TI
ASSEMBLY, GOBO BULKHEAD ARC (21.9663.1600) - A/AS/AI

Tools:

#2 Phillips long handle screwdriver

To remove and replace gobo wheel bulkhead:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove front cover. Refer to "Front Cover Removal" on page 24.

CAUTION: The rear assembly is heavy and will remain attached by lamp wires. Place luminaire on tech bench before removing rear assembly.

Step 3. At side rails, remove four 10-32x5/8" PPB screws and #10 split lock washers (**Figure 2-12**). (Side rail spacers will come loose also.) Pull rear head assembly away from front head assembly.

Step 4. At gobo bulkhead, disconnect all motor and sensor wiring.

Step 5. At side rails, remove four 10-32x3/8" PPB screws and #10 split-lock washers.

Step 6. Remove gobo bulkhead.

Step 7. Replace by doing steps 2 through 6 in reverse.

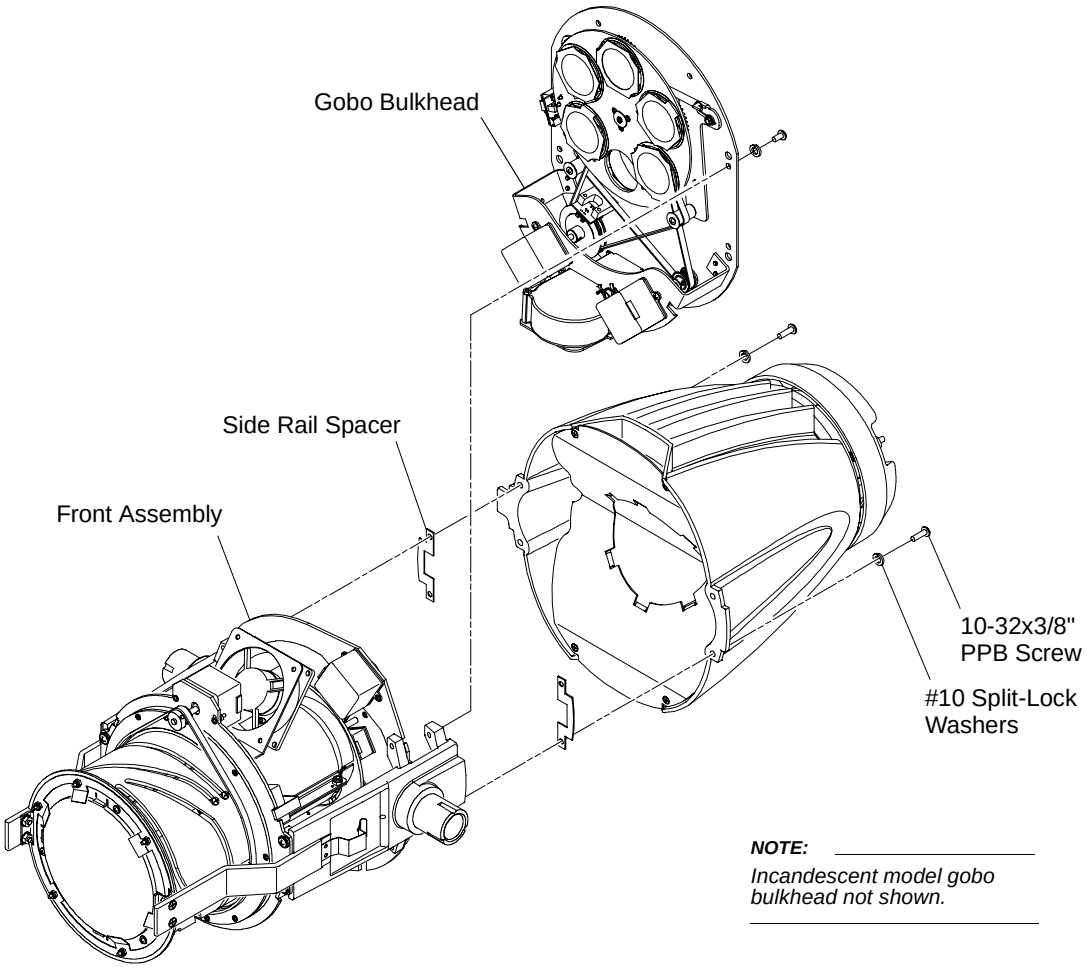


Figure 2-12: Gobo Bulkhead Assembly Replacement

Gobo Gear Planet Alignment

Each gear of the gobo wheel assembly must be aligned so that the gobos will index correctly. Use the following procedure to re-align the gears in the event the gobo wheel is disassembled.

To re-align gobo gears:

Step 1. Place center (sun) gear at starting point so that alignment mark is directly facing Position 1 (open) as shown in **Figure 2-13**.

Step 2. Set Position 6 planet gear as follows:

a. Rotate center gear clockwise until alignment mark is directly facing Position 6.

b. Lift edge of center gear slightly (so that it will not turn), while at same time rotating Position 6 gear until alignment mark is directly across from center gear alignment mark. Lower center gear into place and verify alignment.

Step 3. Set Position 5 planet gear as follows:

a. Rotate center gear clockwise until alignment mark is directly facing Position 5.

b. Lift edge of center gear slightly (so that it will not turn), while at same time rotating Position 5 gear until alignment mark is directly across from center gear alignment mark. Lower center gear into place and verify alignment.

Step 4. Set remaining planet gears by following same procedure. When all gears are aligned, rotate center gear in full rotation to verify alignments. When rotating, marks should align perfectly at each gear as they pass. Adjust as necessary and recheck.

Step 5. Install flange, pulley and three 4-40x5/16" PFB screws to secure gears in place.

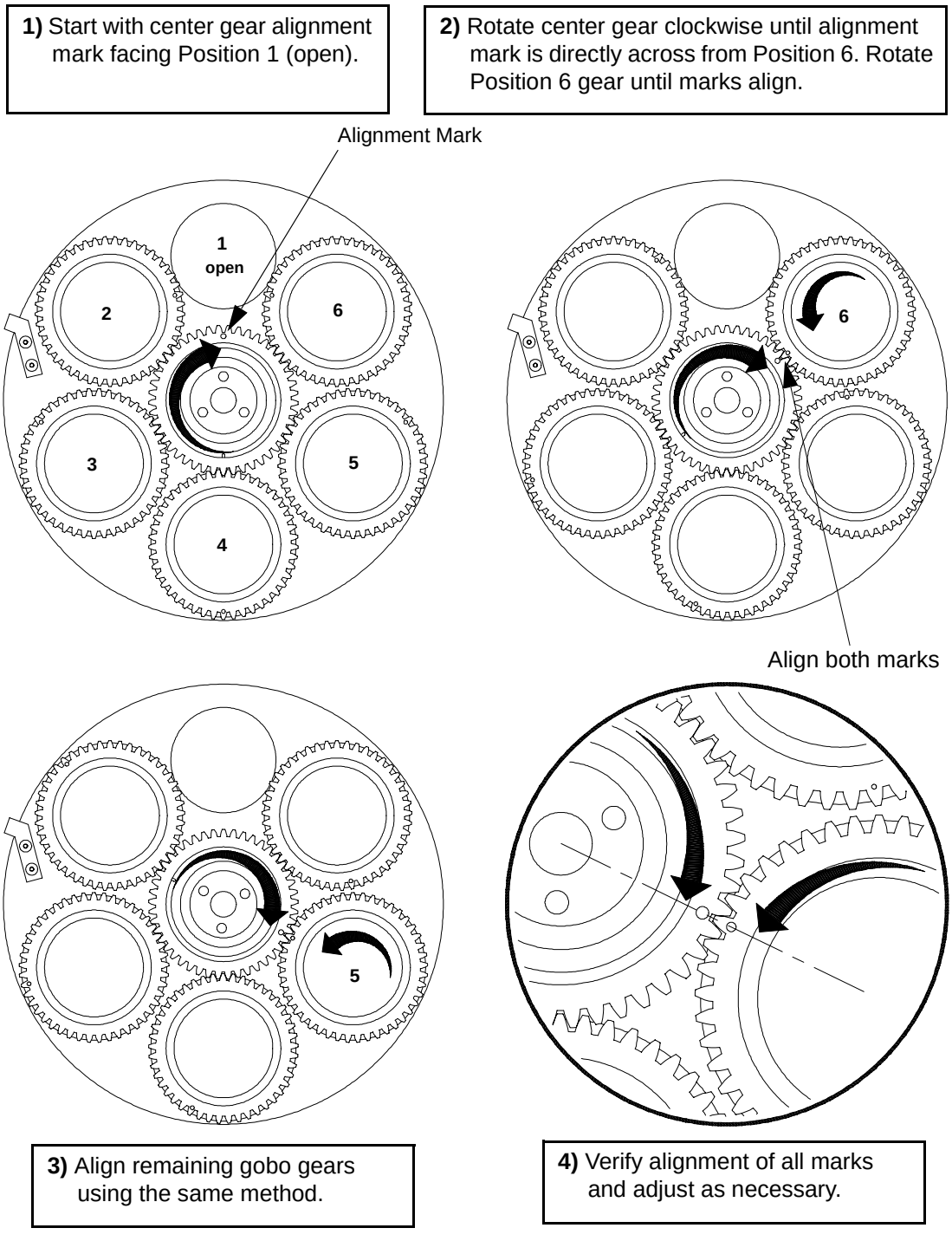

1) Start with center gear alignment mark facing Position 1 (open).
2) Rotate center gear clockwise until alignment mark is directly across from Position 6. Rotate Position 6 gear until marks align.
Alignment Mark
1
open
2
6
3
5
4
6
Align both marks
5
3) Align remaining gobo gears using the same method.
4) Verify alignment of all marks and adjust as necessary.

Figure 2-13: Aligning Gobo Wheel Gears

Shutter Assembly Replacement

Parts:

ASSEMBLY, SHUTTER (21.9663.1300) (Old Version) *or*
ASSEMBLY, SHUTTER 6 ROLLERS (21.9663.1350) (New Version)

Tools:

#2 Phillips long handle screwdriver+

To remove and replace shutter assembly:

Step 1. Disconnect luminaire AC input cable from power source.

CAUTION: The rear assembly is heavy and will remain attached by lamp wires. Place luminaire on tech bench before removing rear assembly.

Step 2. Remove front cover, rear head assembly and gobo wheel bulkhead. Refer to "Gobo Wheel Bulkhead Replacement" on page 30.

Step 3. Remove yoke leg cover (side with menu display) by removing two 6-32x1/2" PPB screws and two 6-32x3/8" PPB screws (**Figure 2-14**).

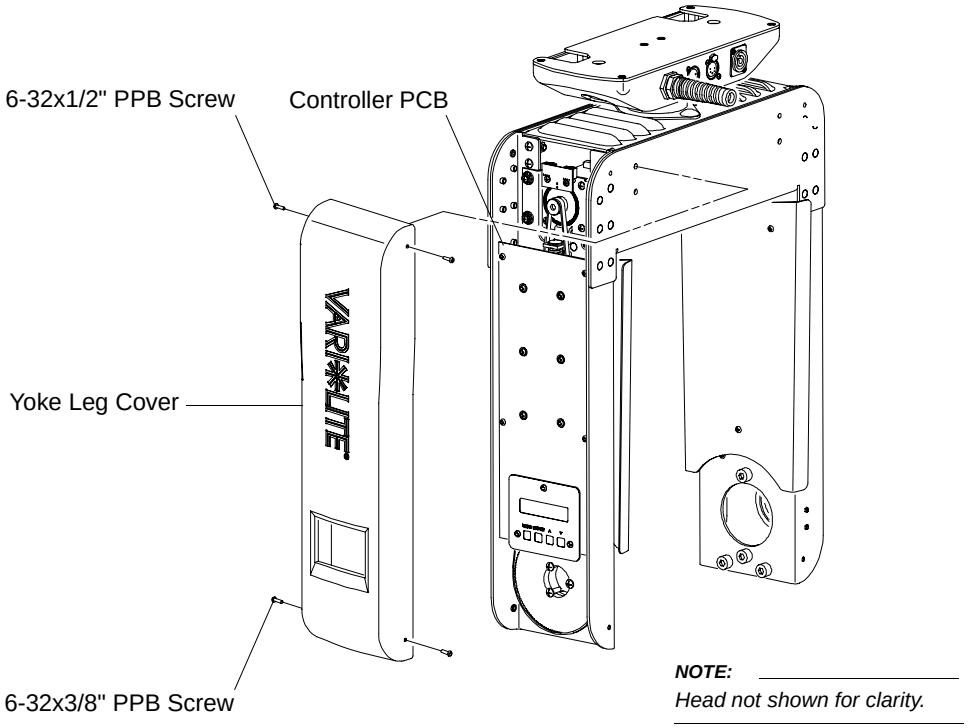


Figure 2-14: Removing Yoke Leg Cover to Access Controller PCB

Step 4. At Controller PCB, disconnect shutter wiring harness at position marked SHUTTERS.

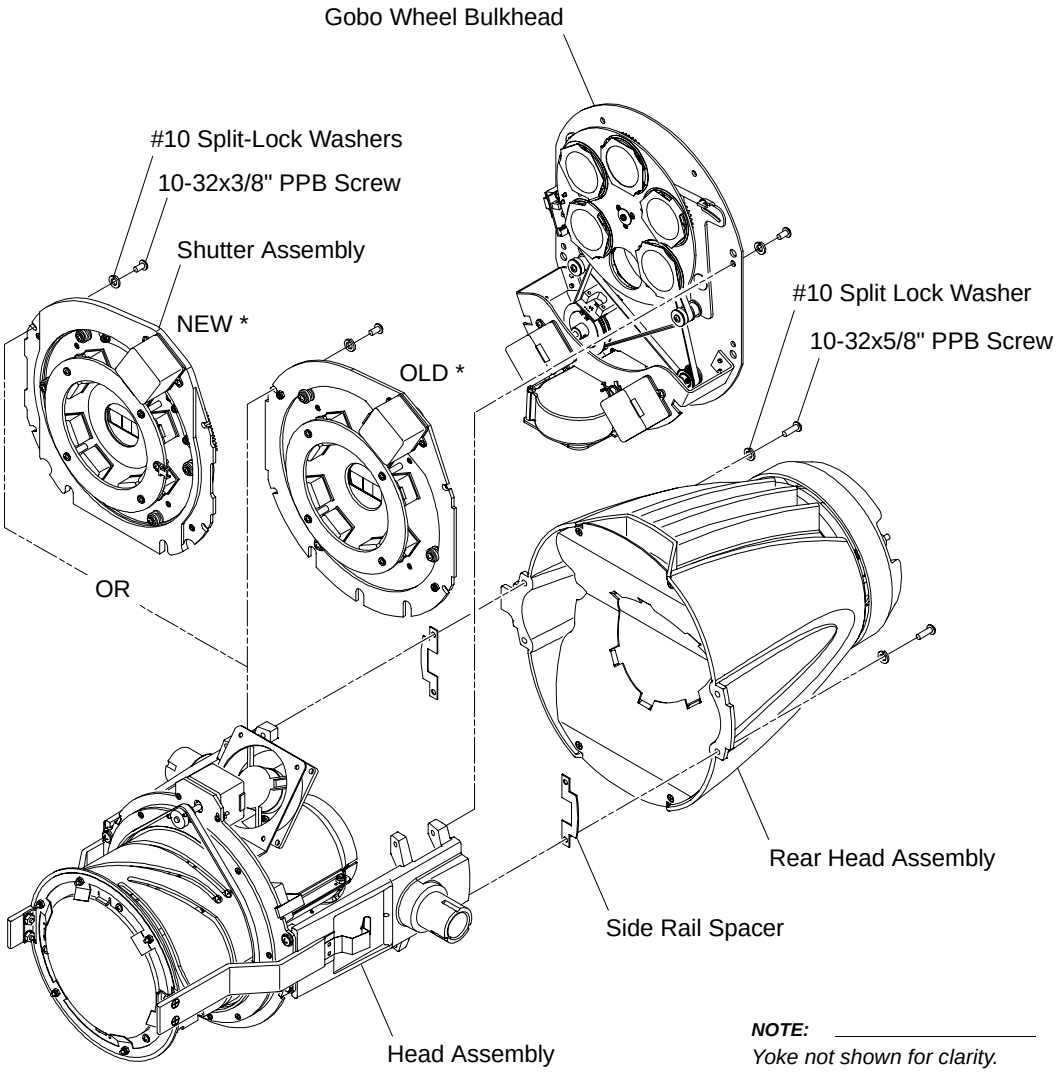
Step 5. Noting placement, cut tie-wraps securing harness to other wires.

Step 6. Feed shutter harness cable out of yoke arm.

Step 7. At side rails, remove four 10-32x3/8" PPB screws and #10 split-lock washers and remove shutter assembly (**Figure 2-15**).

CAUTION: Do not overtighten tie-wraps when re-installing.

Step 8. Replace shutter assembly by doing steps 2 through 7 in reverse.



* Depending on when the luminaire was manufactured.

Figure 2-15: Shutter Assembly Replacement

Shutter Blade or Rack Replacement

Parts:

as required:

BLADE, SHUTTER, COATED SIDE A (12.9663.1323)

BLADE, SHUTTER, COATED SIDE B (12.9663.1324)

RACK, SHUTTER (10.9663.1314)

Tools:

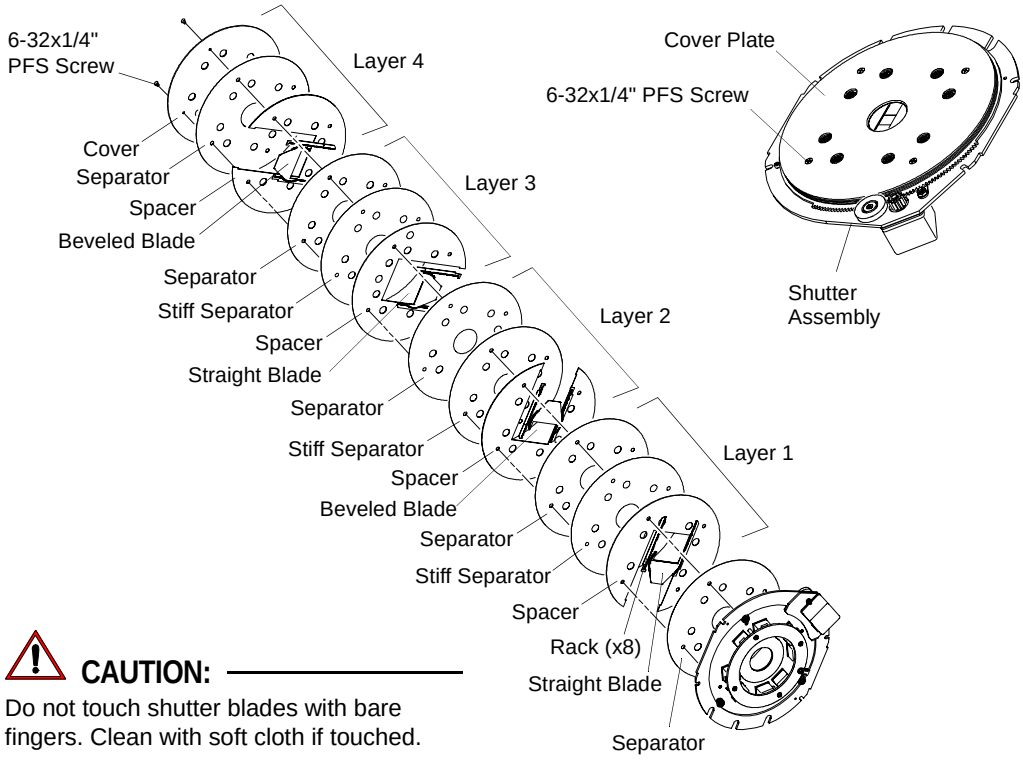
#2 Phillips screwdriver

To remove and replace a shutter blade or rack:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove shutter assembly. Refer to "Shutter Assembly Replacement" on page 34.

Step 3. Place shutter assembly on work bench, motor side down. Remove four 6-32x1/4" PFS screws and remove cover plate (**Figure 2-16**).



CAUTION:

Do not touch shutter blades with bare fingers. Clean with soft cloth if touched.

Figure 2-16: Shutter Assembly Breakdown

Step 4. Carefully remove plates and components until blade or rack to be replaced is reached. Install new component(s) as required.

Step 5. Re-assemble shutter's four layers. Ensure that components are oriented and aligned as shown in **Figure 2-17**.

Note: The difference between the two types of shutter blades can be found by examining the main edge. Coated Side A blades (12.9663.1323) are beveled and the Coated Side B blades (12.9663.1324) are not.

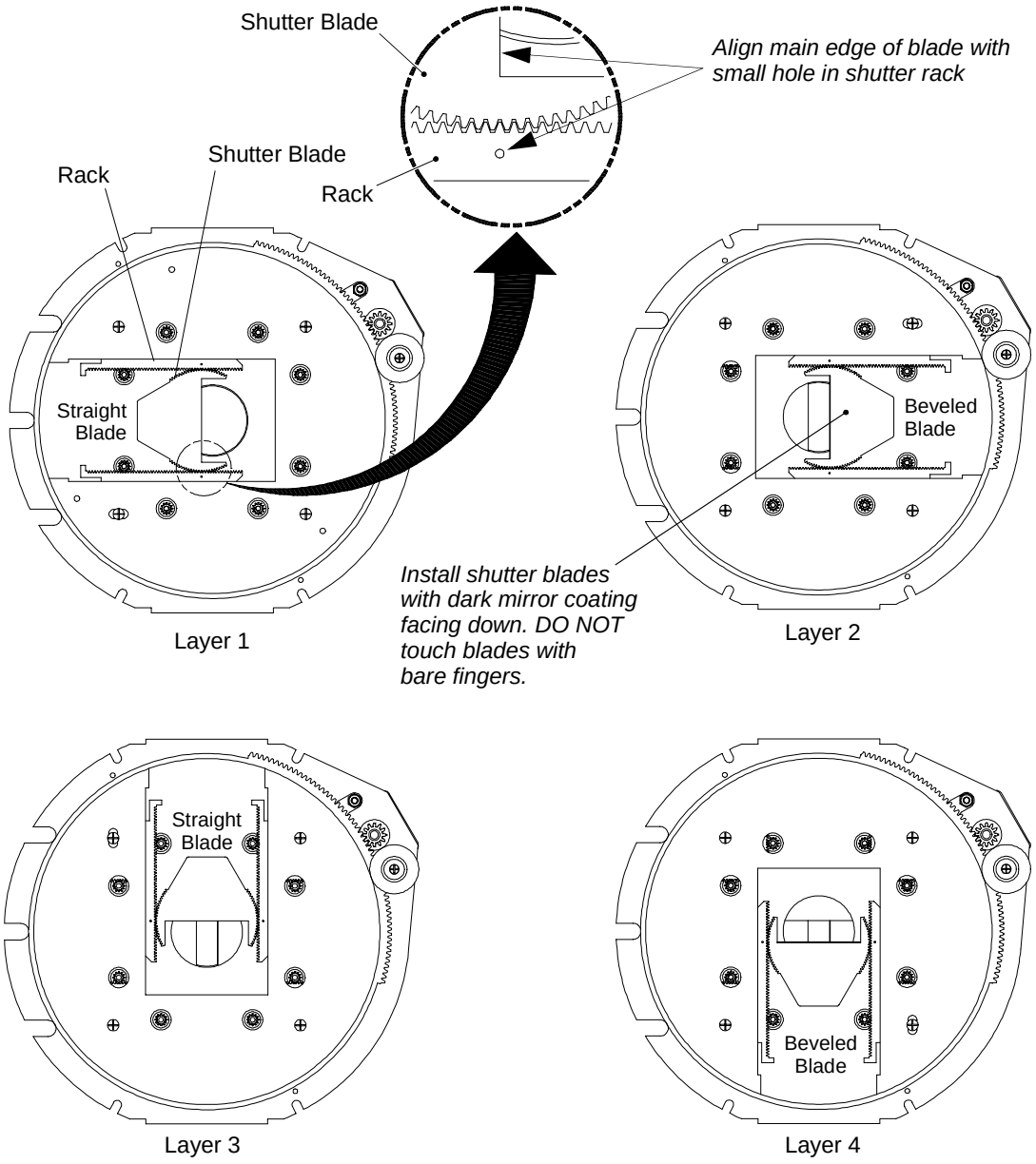


Figure 2-17: Shutter Assembly Layer Orientation

Edge/Zoom/Color Bulkhead Replacement

Parts:

ASSEMBLY, EDGE CONTROL, DIMMER AND COLOR (21.9663.1003)

Tools:

#2 Phillips screwdriver

To remove and replace edge/zoom/color bulkhead:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove front cover. (Refer to "Front Cover Removal" on page 24.)

Step 3. At edge/zoom/color assembly, disconnect wiring harness connections.

Step 4. At side rail, remove four 8-32x1/2" PFB screws (**Figure 2-18**).

Step 5. At front, remove four 8-32 Keps nuts and remove assembly.

Step 6. Replace assembly by doing steps 2 through 5 in reverse.

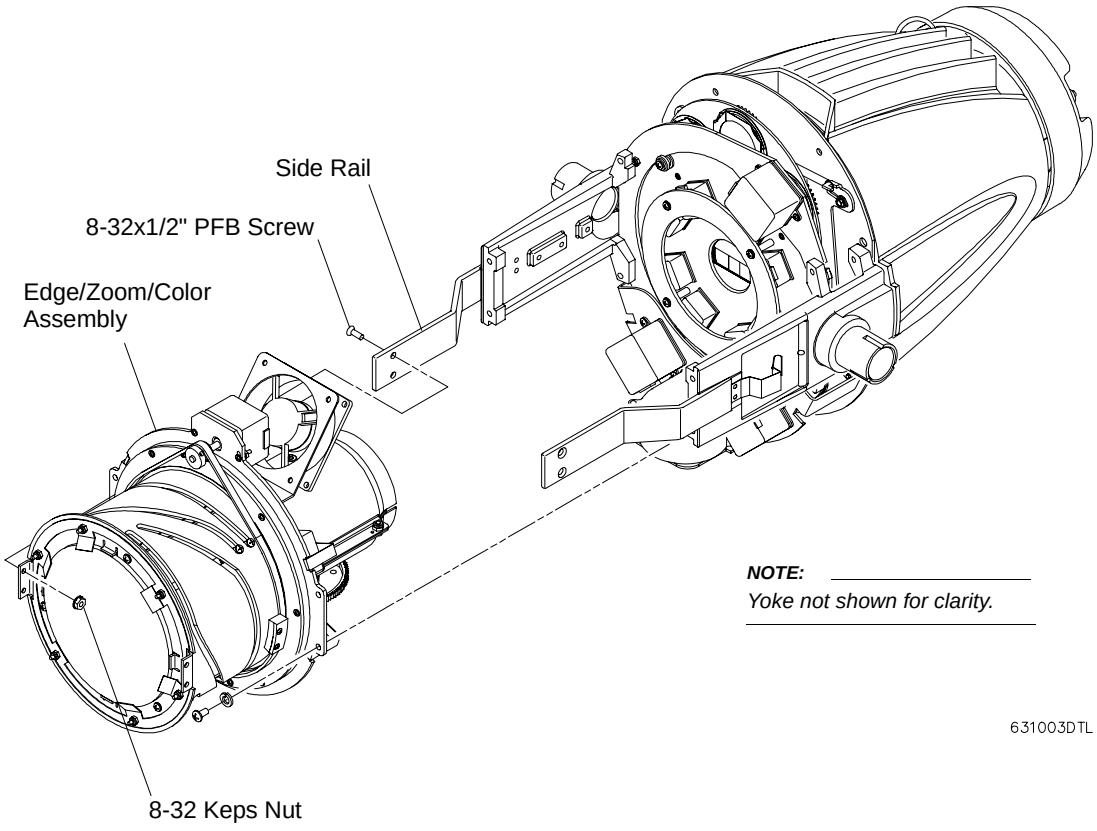


Figure 2-18: Edge/Zoom/Color Bulkhead Replacement

Fan/Temp Switch Assembly Replacement

Note: Fan does not operate under normal luminaire operating conditions.

Parts:

CABLE ASSEMBLY, FAN/TEMP SWITCH (23.9663.2009)

Tools:

#2 Phillips screwdriver

To remove and replace fan/temp switch assembly:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove edge/dimmer/color bulkhead. Refer to "Edge/Zoom/Color Bulkhead Replacement" on page 38.

Step 3. At fan, remove four 6-32 x 3/8 " PPSS black screws and 6-32 nylon insert hex nuts and remove fan/temp switch assembly (**Figure 2-19**).

Step 4. Replace assembly by doing steps 2 and 3 in reverse.

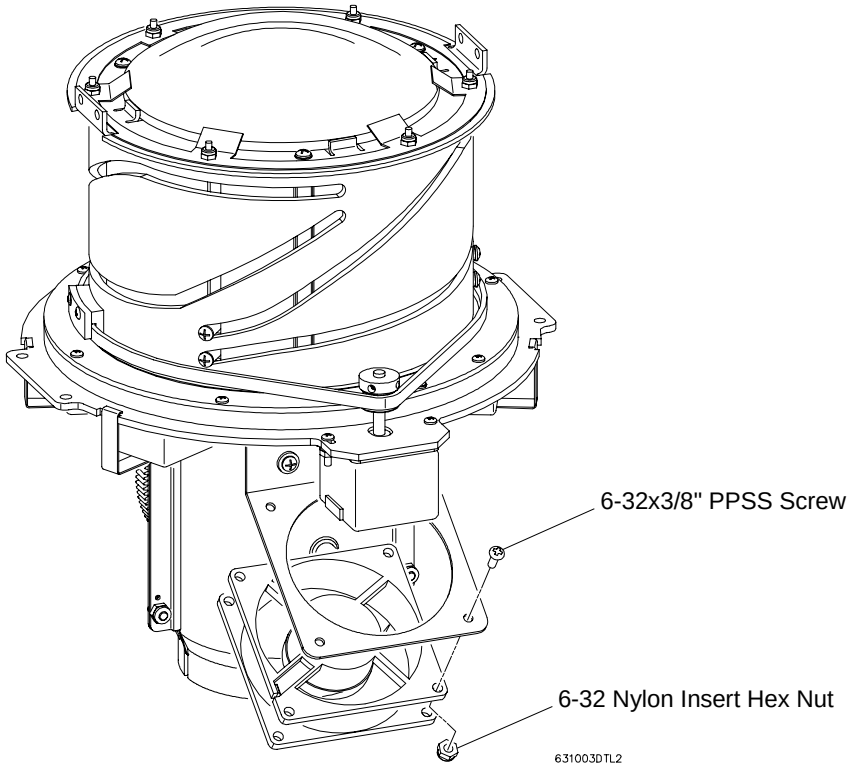


Figure 2-19: Fan/Temp Switch Assembly Replacement

Beam-Size Iris Assembly Replacement

Note: This procedure not applicable to all units.

Parts:

ASSEMBLY, IRIS (21.9663.1400)

Tools:

#2 Phillips screwdriver

To remove and replace beam-size iris assembly:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove front cover. Refer to "Front Cover Removal" on page 24.

Step 3. At beam-size iris assembly, disconnect motor connectors (**Figure 2-20**).

Step 4. At side rails, remove four 10-32x3/8" PPB screws and #10 split-lock washers and remove iris assembly.

Step 5. Replace iris assembly by doing steps 2 through 4 in reverse.

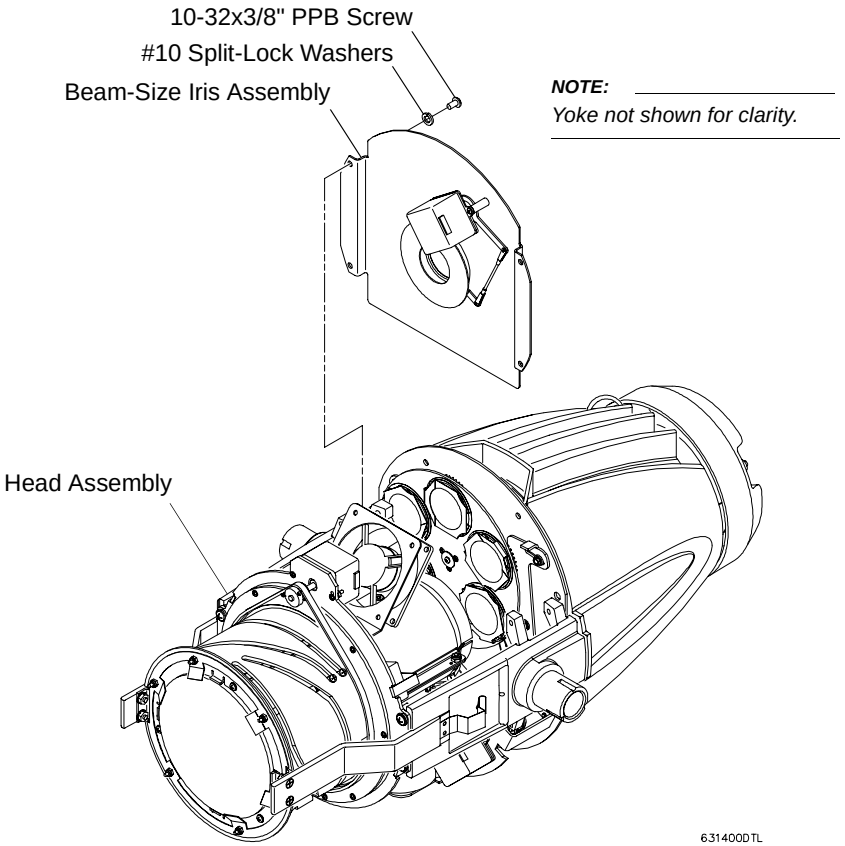


Figure 2-20: Beam-Size Iris Assembly Replacement

Ignitor PCB Replacement

Note: This procedure not applicable to all units.

Parts:

PCB ASSEMBLY, IGNITOR (24.9661.1125)

Tools:

#2 Phillips screwdriver

To remove and replace ignitor PCB:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg cover (side without menu display) by removing two 6-32x1/2" PPB screws and two 6-32x3/8" PPB screws (**Figure 2-21**).

Step 3. At ignitor PCB, disconnect lamp connectors.

Step 4. Remove four 6-32x3/8" PPB screws and remove ignitor PCB.

Step 5. Replace ignitor PCB by doing steps 2 through 4 in reverse.

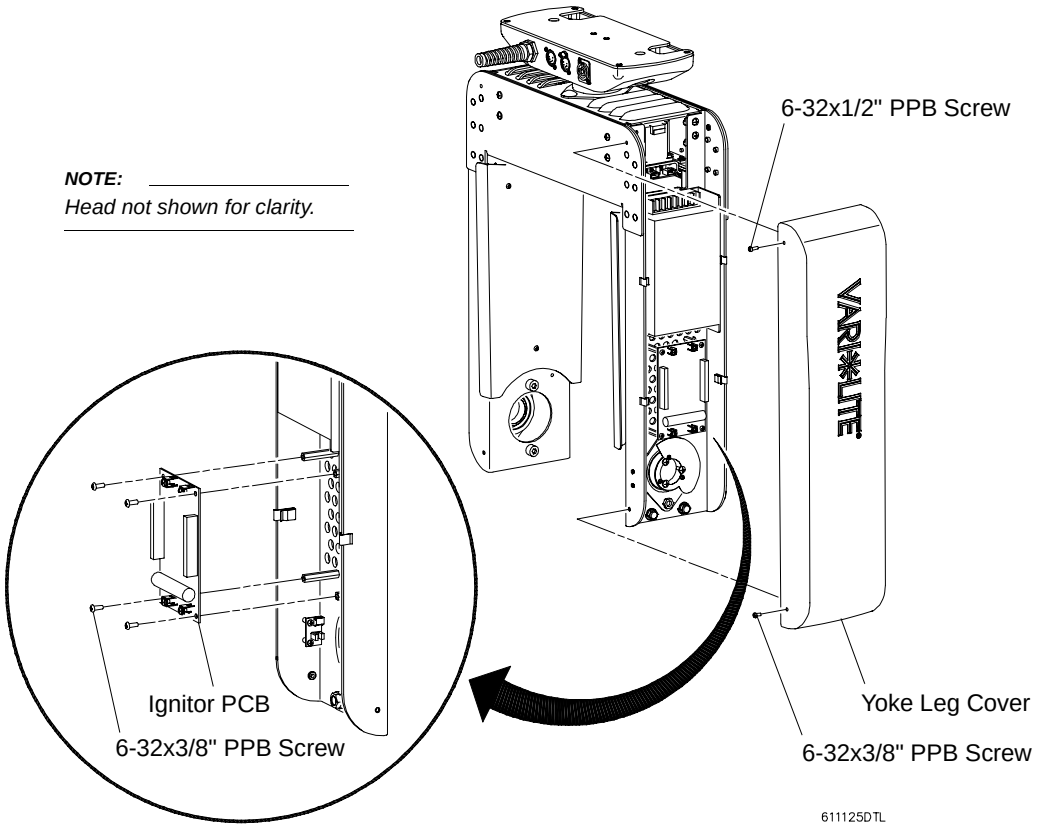


Figure 2-21: Ignitor PCB Replacement

Power Supply Replacement

Parts:

POWER SUPPLY, 130W +24V/6.3A (69.3126.0150)

Tools:

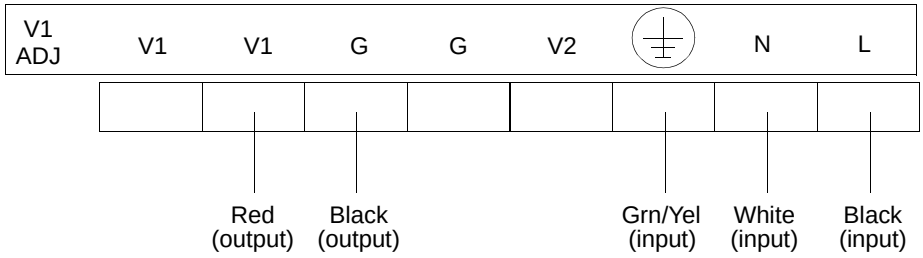
#1 Phillips screwdriver, 5/16 inch nutdriver

To remove and replace power supply:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg cover (side without menu display) by removing two 6-32x1/2" PPB screws and two 6-32x3/8" PPB screws (**Figure 2-22**).

Step 3. At power supply, disconnect all connectors. Power input and output wiring is connected as follows:



Step 4. To access top mounting screw and Keps nut, remove crossmember assembly from yoke by removing sixteen 10-32x1/2" PPB screws.

Step 5. At interior of yoke assembly, remove one 6-32x3/8" PPB screw (and 6-32 Keps nut) which secures top end of power supply.

Step 6. At outer portion of yoke, remove two additional 6-32 Keps nuts and two 6-32x3/8" PPB screws and remove power supply.

Step 7. Replace power supply by doing steps 2 through 6 in reverse.

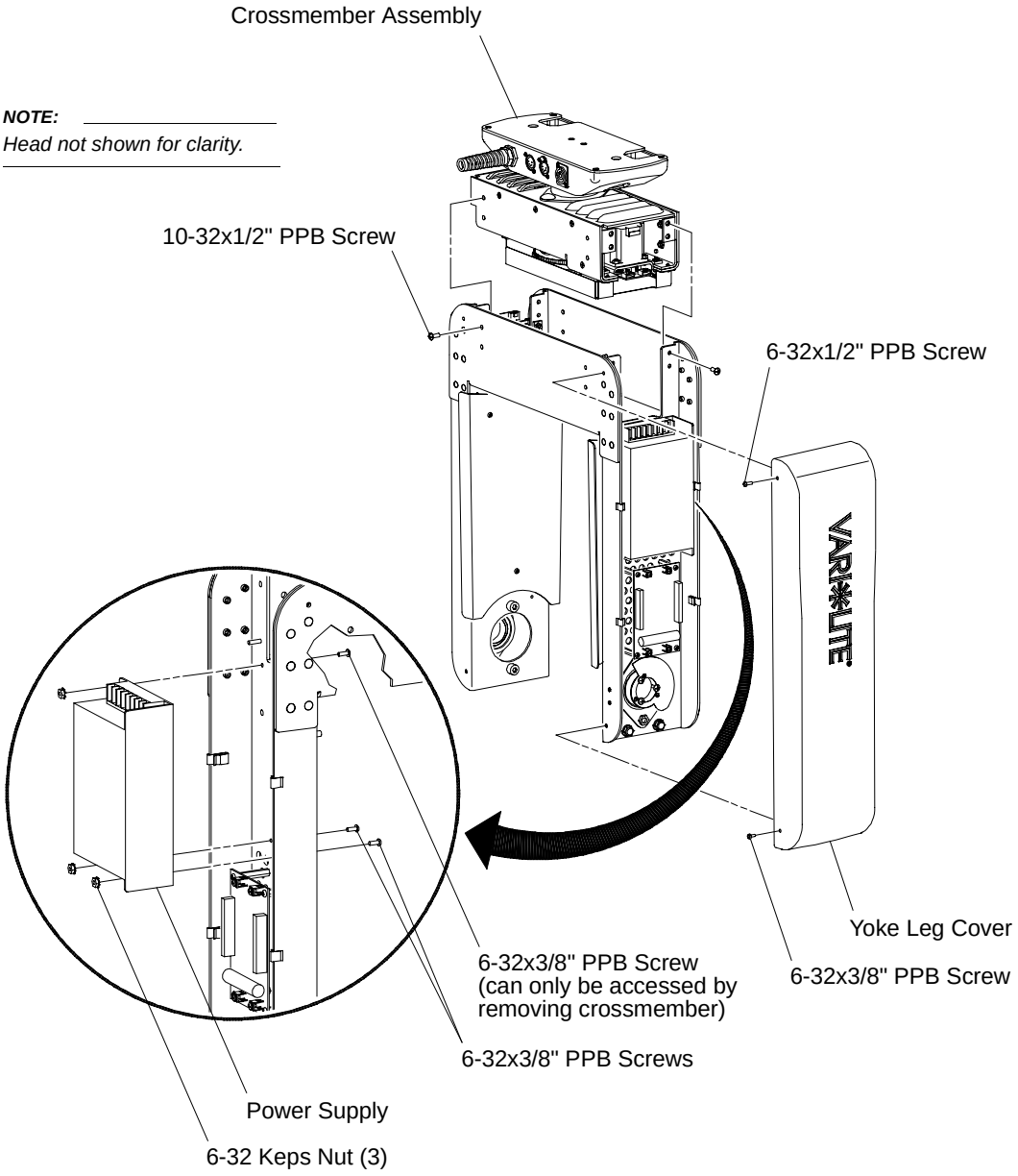


Figure 2-22: Power Supply Replacement

Controller PCB Replacement

Parts:

PCB ASSEMBLY, CONTROLLER (24.9663.1930)

Tools:

#1 Phillips screwdriver

To remove and replace controller PCB:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg cover (side with menu display) by removing two 6-32x1/2" PPB screws and two 6-32x3/8" PPB screws (**Figure 2-23**).

Step 3. Remove display overlay and plate, by removing three 6-32x1/2" PPB screws.

Step 4. At controller PCB, disconnect wiring at connectors marked:

a. GOBO/COLOR/ZOOM/EDGE/DIMMER/ROTATE

b. PAN/TILT

c. POWER

d. COMM

e. SHUTTERS (if applicable)

f. BALLAST (if applicable)

Step 5. At controller PCB, remove four 6-32x3/8" PPB screws and remove PCB.

Step 6. Replace controller PCB by doing steps 2 through 5 in reverse.

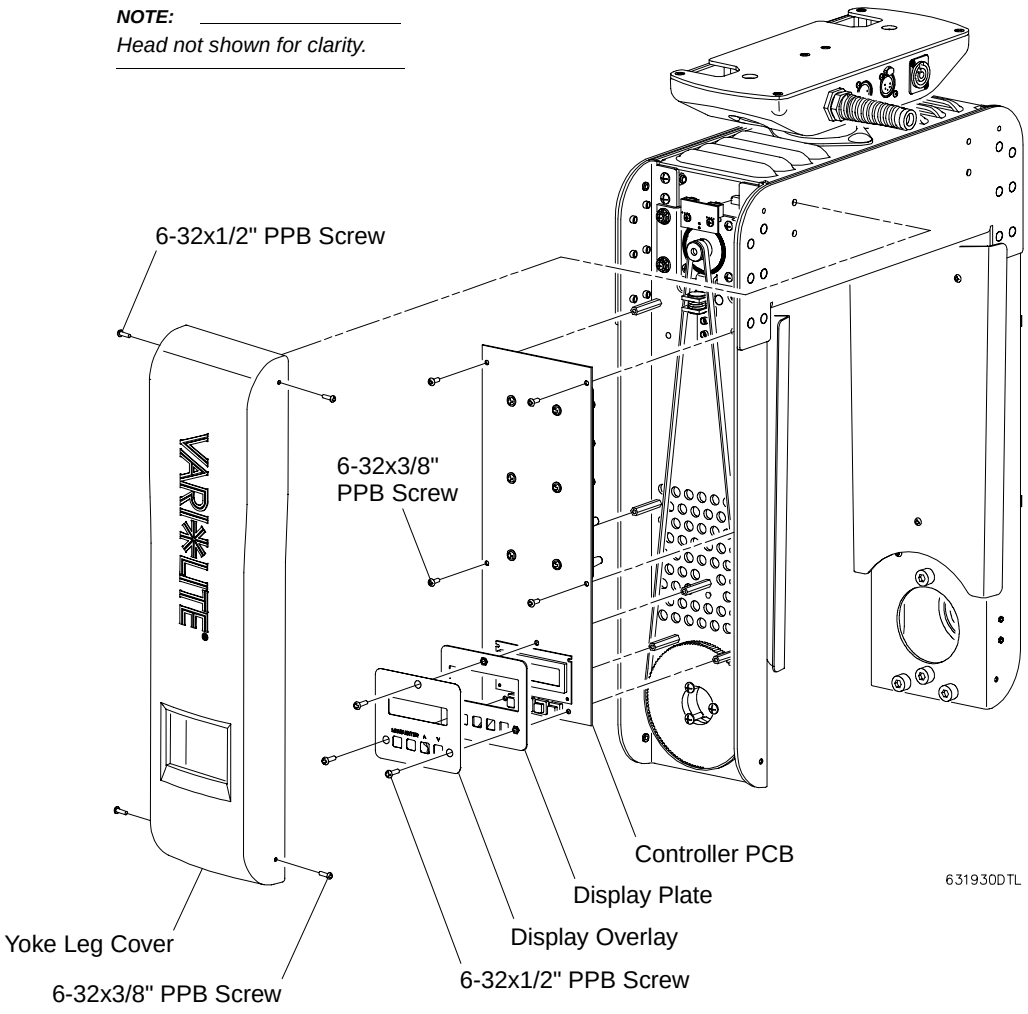


Figure 2-23: Controller PCB Replacement

Tilt Encoder PCB Replacement

Parts:

PCB ASSY, PAN/TILT ENCODER (24.9661.0629)

Tools:

#2 Phillips screwdriver

To remove and replace tilt encoder PCB:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg cover (side with menu display) by removing two 6-32x1/2" PPB screws and two 6-32x3/8" PPB screws (**Figure 2-24**).

Step 3. At tilt encoder PCB, remove two 4-32 screws.

Step 4. Disconnect connectors at J1 and J2.

Step 5. Remove encoder PCB.

Step 6. Replace encoder PCB by doing steps 2 through 5 in reverse.

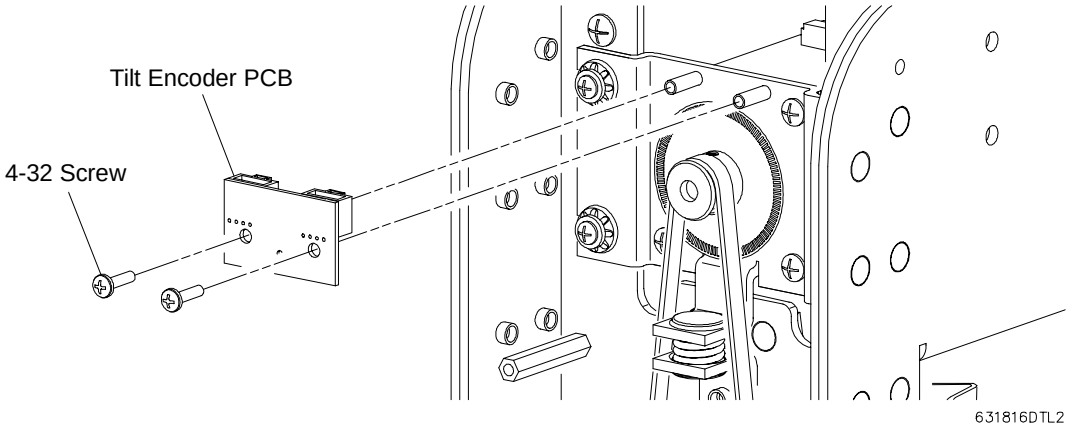


Figure 2-24: Tilt Encoder PCB Replacement

Tilt Motor Assembly Replacement

Parts:

ASSEMBLY, TILT MOTOR (21.9663.1816)

Tools:

#2 Phillips screwdriver

To remove and replace tilt motor assembly:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg cover (side with menu display) by removing two 6-32x1/2" PPB screws and two 6-32x3/8" PPB screws (**Figure 2-25**).

Step 3. Remove display overlay and plate, by removing three 6-32x1/2" PPB screws.

Step 4. At controller PCB, disconnect wiring at connectors marked:

a. GOBO/COLOR/ZOOM/EDGE/DIMMER/ROTATE

b. PAN/TILT

c. POWER

d. COMM

e. SHUTTERS (if applicable)

f. BALLAST (if applicable)

Step 5. Remove four 6-32x3/8" PPB screws and remove controller PCB.

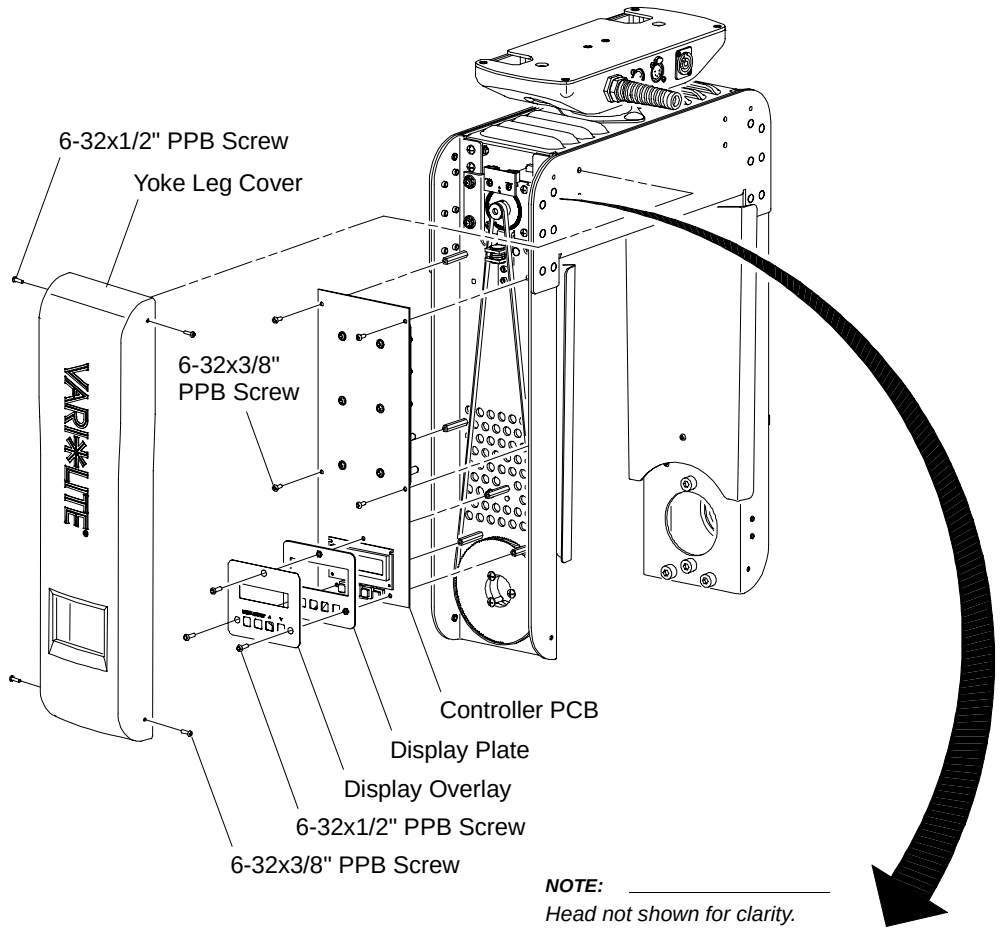
Step 6. At encoder PCB, remove two 4-32 screws.

Step 7. Disconnect connectors at J1 and J2 and remove encoder PCB.

Step 8. At tilt motor assembly, loosen four 6-32x1" PPB screws. Slide assembly forward and remove belt from pulley.

Step 9. Remove four 6-32x1" PPB screws and #6 flat washers and remove tilt motor assembly (spring will come loose also).

Step 10. Replace by doing steps 2 through 9 in reverse. (Belt tension is automatically set by spring.)



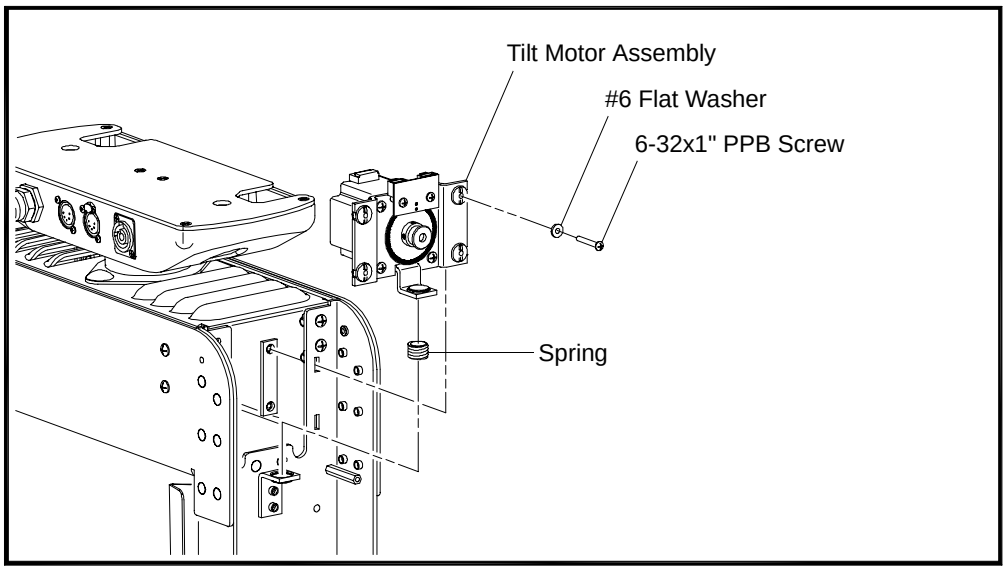


Figure 2-25: Tilt Motor Assembly Replacement

Pan Motor Assembly Replacement

Parts:

ASSEMBLY, PAN MOTOR (21.9663.1815)

Tools:

#2 Phillips screwdriver

To remove and replace pan motor assembly:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. Remove yoke leg covers by removing two 6-32x1/2" PPB screws and two 6-32x3/8" PPB screws on each side (**Figure 2-26**).

Step 3. Remove crossmember assembly from yoke by removing sixteen 10-32x1/2" PPB screws.

Step 4. At crossmember assembly, remove pan wire shield by removing four 4-40x3/8" PPZ screws.

Step 5. At pan motor assembly, loosen four 6-32x1" PPB screws. Slide assembly forward and remove belt from pulley.

Step 6. Remove four 6-32x1" PPB screws and #6 flat washers and remove pan motor assembly (nut plate will come loose also).

Step 7. Replace pan motor assembly by doing steps 2 through 6 in reverse. (Belt tension is automatically set by spring.)

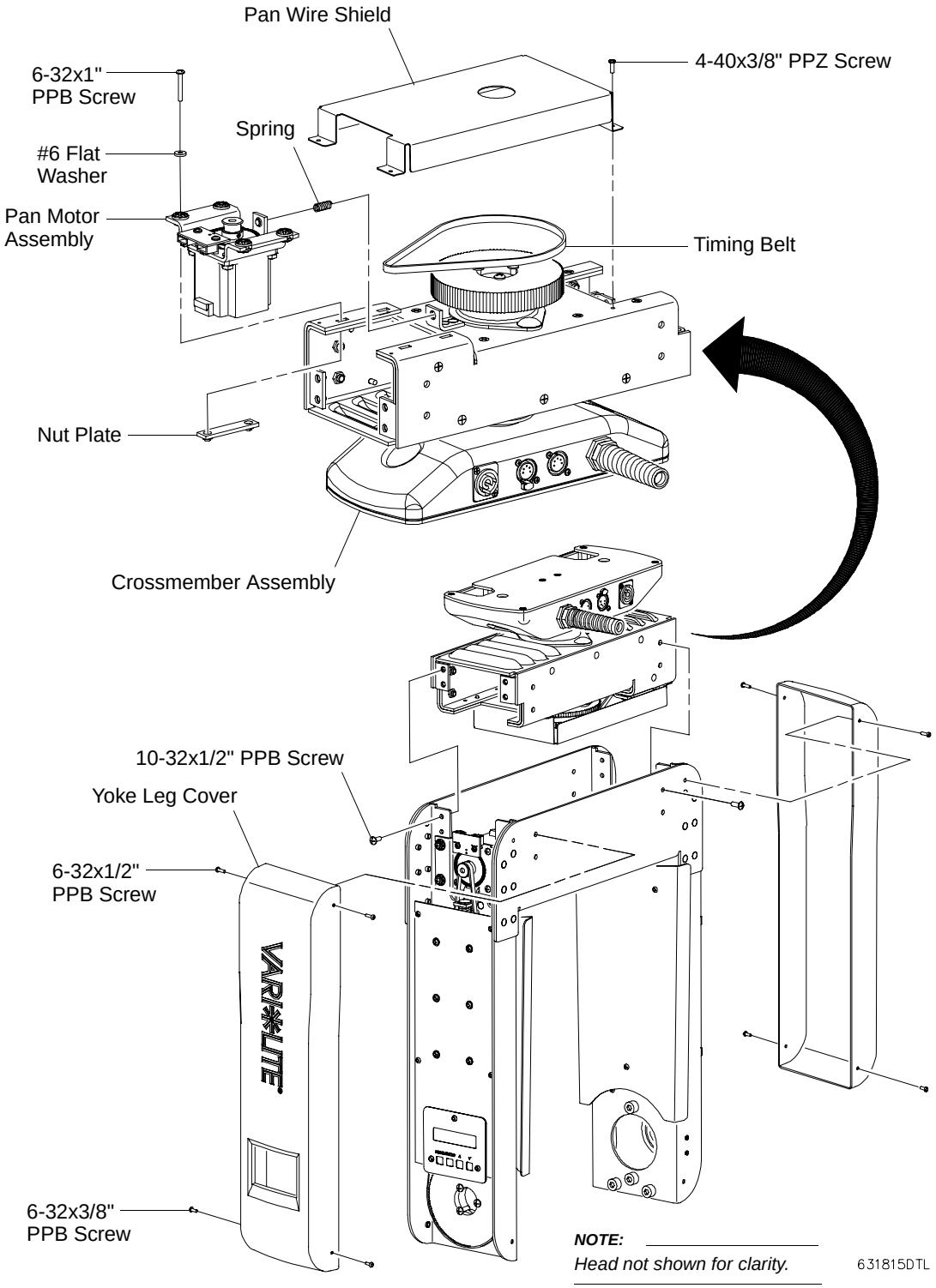


Figure 2-26: Pan Motor Assembly Replacement

DMX Input PCB Replacement

Parts:

PCB ASSEMBLY, DMX INPUT (24.9663.1830)

Tools:

#2 Phillips screwdriver

To remove and replace DMX input PCB:

Step 1. Disconnect luminaire AC input cable from power source.

Step 2. At pan tube cover, remove four 8-32x3/8" PFZ screws and remove cover (**Figure 2-27**).

Step 3. Remove four 4-40x3/8" PPZ screws.

Step 4. Disconnect DMX input PCB wiring and remove PCB.

Step 5. Replace DMX input PCB by doing steps 2 through 4 in reverse.

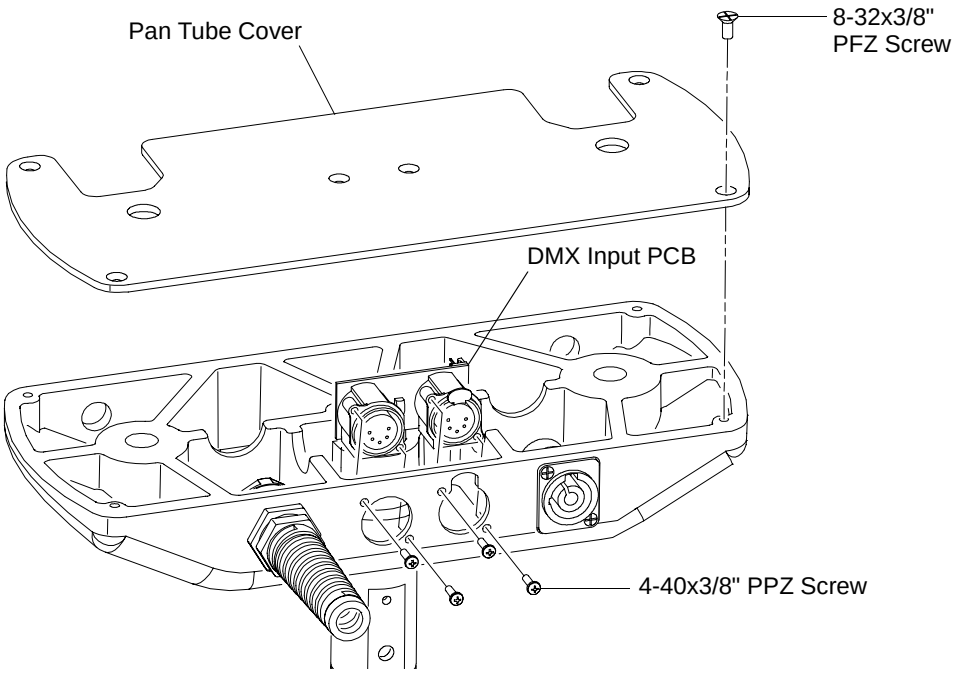


Figure 2-27: DMX Input PCB Replacement

Cleaning Optical Lenses and Filters

WARNING: Remove power from luminaire before performing maintenance.

The front lens and gobos may require cleaning after extended use. A common glass cleaner can be used along with a soft, lint-free cloth to clean these components.

To access gobos, refer to “Rotating Gobo Replacement” on page 26.

CHAPTER 3.

Illustrated Parts Breakdown

This chapter contains illustrated parts breakdowns for all VL1000 assemblies including the arc ballast unit.

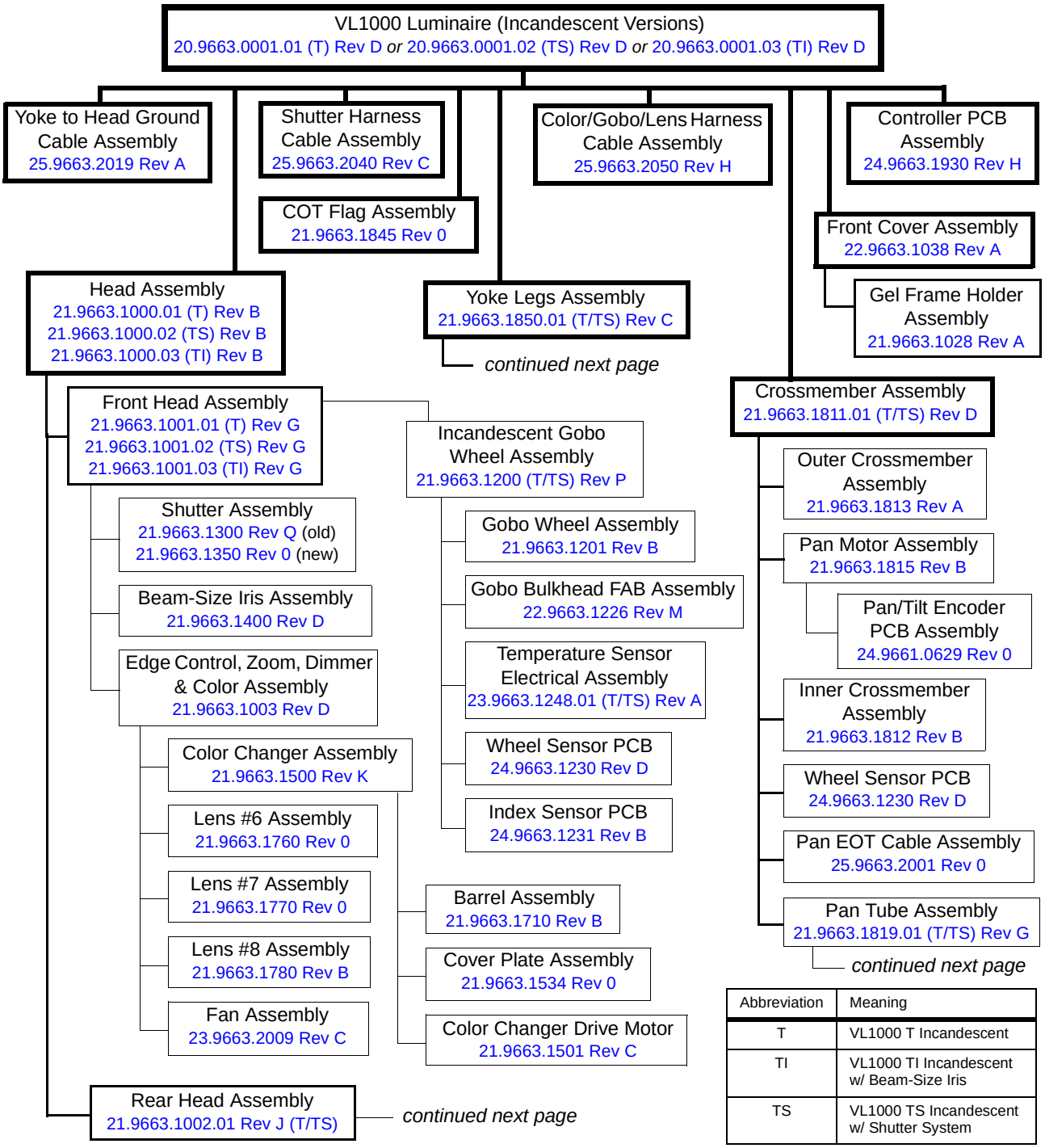
- **Drawing Trees**
- **Top Assembly**
- **Head Assembly**
- **Yoke Assembly**
- **Cables**
- **Arc Ballast Assembly**

The following abbreviations are used in the Illustrated Parts Breakdown to identify parts specific to certain models:

ABBREVIATION	MEANING
T	VL1000 T Incandescent Luminaire
TI	VL1000 TI Incandescent Luminaire w/ Beam-Size Iris
TS	VL1000 TS Incandescent Luminaire w/ Shutter System
A	VL1000 A Arc Luminaire
AI	VL1000 AI Arc Luminaire w/ Beam-Size Iris
AS	VL1000 AS Arc Luminaire w/ Shutter System

Drawing Trees

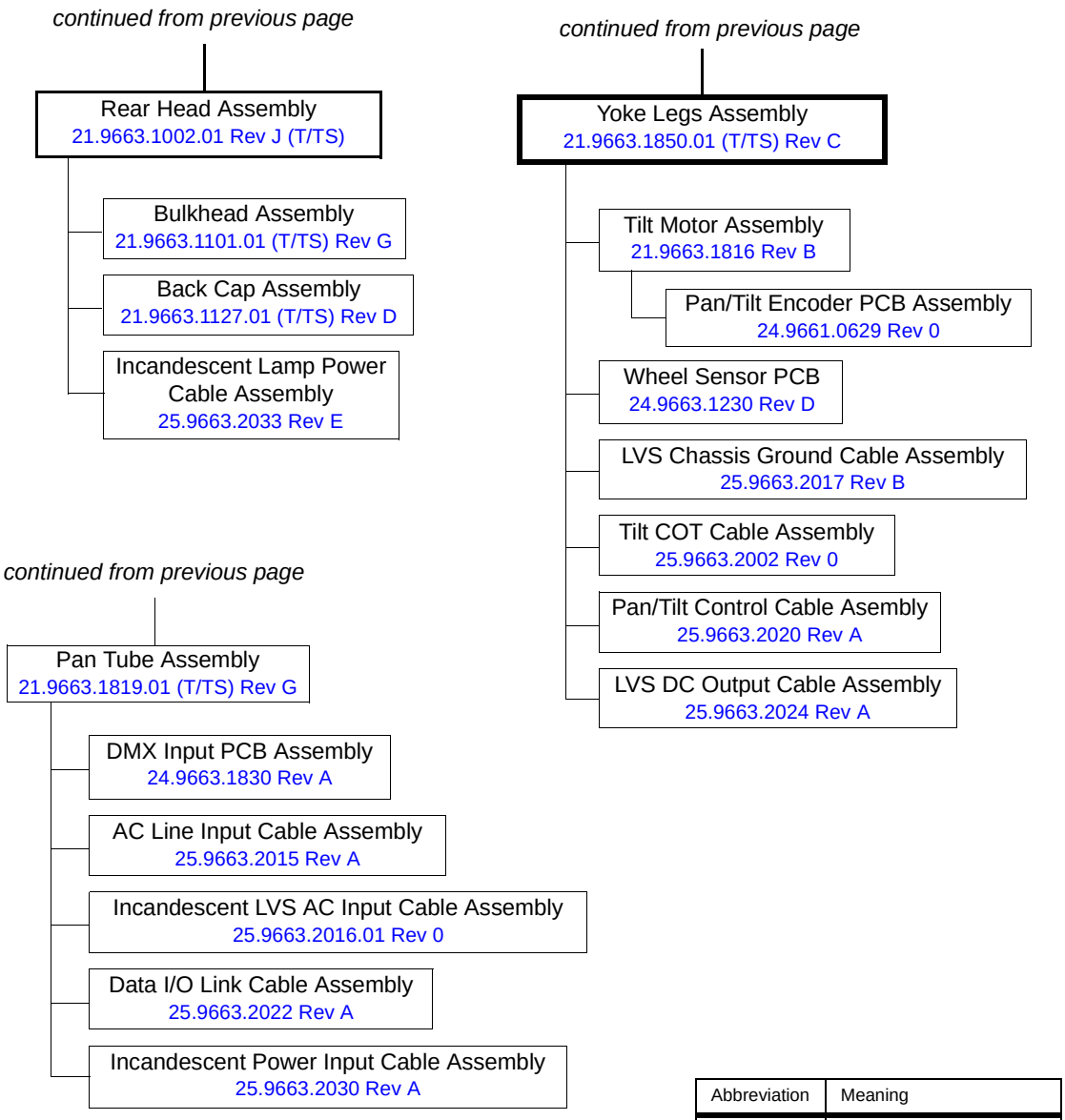
VL1000 Incandescent Luminaires



Abbreviation	Meaning
T	VL1000 T Incandescent
TI	VL1000 TI Incandescent w/ Beam-Size Iris
TS	VL1000 TS Incandescent w/ Shutter System

Figure 3-1: VL1000 Incandscent Luminaires Drawing Tree (Part 1)

VL1000 Incandescent Luminaires (cont.)



Abbreviation	Meaning
T	VL1000 T Incandescent
TI	VL1000 TI Incandescent w/ Beam-Size Iris
TS	VL1000 TS Incandescent w/ Shutter System

Figure 3-2: VL1000 Incandscent Luminaires Drawing Tree (Part 2)

VL1000 Arc Luminaires

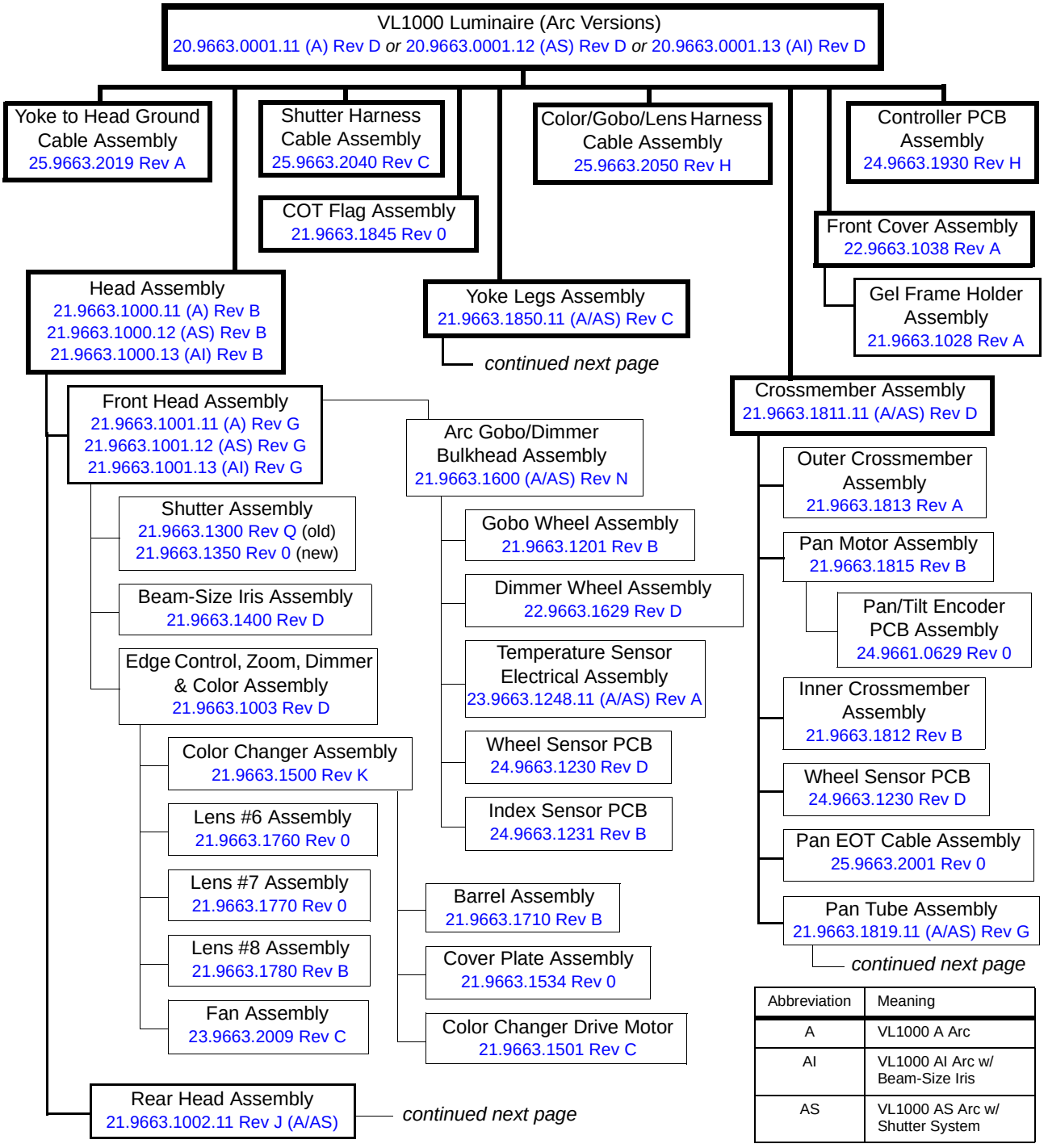
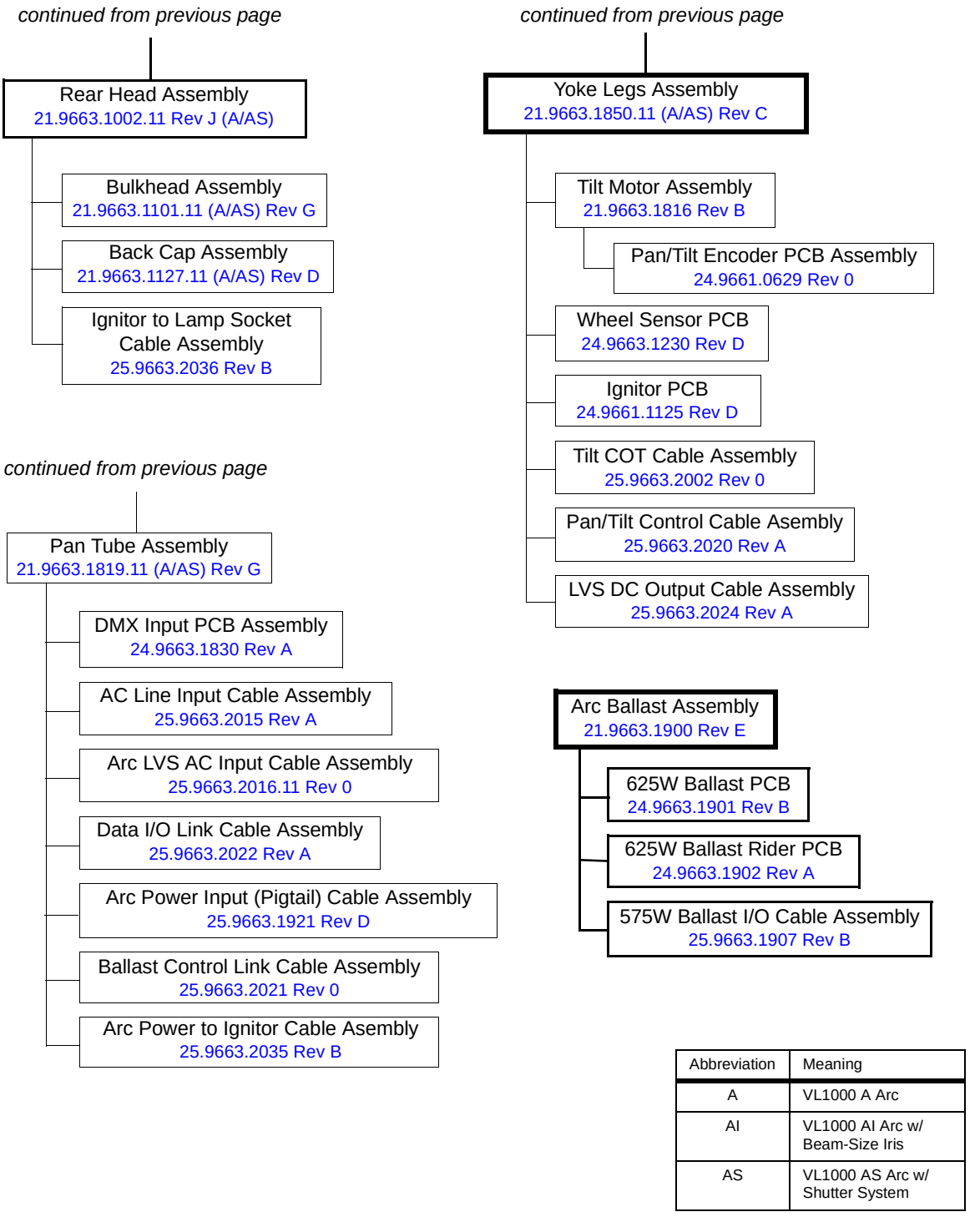

VL1000 Luminaire (Arc Versions)
20.9663.0001.11 (A) Rev D or 20.9663.0001.12 (AS) Rev D or 20.9663.0001.13 (AI) Rev D
Yoke to Head Ground Cable Assembly 25.9663.2019 Rev A
Shutter Harness Cable Assembly 25.9663.2040 Rev C
COT Flag Assembly 21.9663.1845 Rev 0
Color/Gobo/Lens Harness Cable Assembly 25.9663.2050 Rev H
Controller PCB Assembly 24.9663.1930 Rev H
Front Cover Assembly 22.9663.1038 Rev A
Gel Frame Holder Assembly 21.9663.1028 Rev A
Head Assembly 21.9663.1000.11 (A) Rev B 21.9663.1000.12 (AS) Rev B 21.9663.1000.13 (AI) Rev B
Yoke Legs Assembly 21.9663.1850.11 (A/AS) Rev C
continued next page
Front Head Assembly 21.9663.1001.11 (A) Rev G 21.9663.1001.12 (AS) Rev G 21.9663.1001.13 (AI) Rev G
Arc Gobo/Dimmer Bulkhead Assembly 21.9663.1600 (A/AS) Rev N
Crossmember Assembly 21.9663.1811.11 (A/AS) Rev D
Shutter Assembly 21.9663.1300 Rev Q (old) 21.9663.1350 Rev 0 (new)
Beam-Size Iris Assembly 21.9663.1400 Rev D
Edge Control, Zoom, Dimmer & Color Assembly 21.9663.1003 Rev D
Color Changer Assembly 21.9663.1500 Rev K
Lens #6 Assembly 21.9663.1760 Rev 0
Lens #7 Assembly 21.9663.1770 Rev 0
Lens #8 Assembly 21.9663.1780 Rev B
Fan Assembly 23.9663.2009 Rev C
Gobo Wheel Assembly 21.9663.1201 Rev B
Dimmer Wheel Assembly 22.9663.1629 Rev D
Temperature Sensor Electrical Assembly 23.9663.1248.11 (A/AS) Rev A
Wheel Sensor PCB 24.9663.1230 Rev D
Index Sensor PCB 24.9663.1231 Rev B
Barrel Assembly 21.9663.1710 Rev B
Cover Plate Assembly 21.9663.1534 Rev 0
Color Changer Drive Motor 21.9663.1501 Rev C
Outer Crossmember Assembly 21.9663.1813 Rev A
Pan Motor Assembly 21.9663.1815 Rev B
Pan/Tilt Encoder PCB Assembly 24.9661.0629 Rev 0
Inner Crossmember Assembly 21.9663.1812 Rev B
Wheel Sensor PCB 24.9663.1230 Rev D
Pan EOT Cable Assembly 25.9663.2001 Rev 0
Pan Tube Assembly 21.9663.1819.11 (A/AS) Rev G
continued next page
Rear Head Assembly 21.9663.1002.11 Rev J (A/AS)
continued next page
Abbreviation
Meaning
A
VL1000 A Arc
AI
VL1000 AI Arc w/ Beam-Size Iris
AS
VL1000 AS Arc w/ Shutter System

Figure 3-3: VL1000 Arc Luminaires Drawing Tree (Part 1)

VL1000 Arc Luminaires (cont.)



Abbreviation	Meaning
A	VL1000 A Arc
AI	VL1000 AI Arc w/ Beam-Size Iris
AS	VL1000 AS Arc w/ Shutter System

Figure 3-4: VL1000 Arc Luminaires Drawing Tree (Part 2)

Top Assembly

Included Items Kit

28.9663.0001 Rev 0

Refer to Figure 3-5.

No.	Item	Qty.	UM.	Description
1	02.8001.0001	1	EA	PRODUCT SUPPORT SHEET, VARI-LITE INC. CUSTOMER SERVICE
2	02.8051.0001	1	EA	CARD, LIMITED WARRANTY 01-16-01
3	02.8700.0001	1	EA	CARD, PRODUCT REGISTRATION - VL2000
4	02.9663.0001	1	EA	USER'S MANUAL, VL1000 LUMINAIRE
5	02.9663.0002	1	EA	UNPACK/QUICK START SHEET, VL1000
6	07.9663.0030	1	EA	SHIPPING BOX, CARDBOARD - VL1000
7	52.6541.0001	1	EA	CONN, BLUE CABLE PWR INLET 3POLE LOCKING - POWERCON
8	71.2552.0100	1	EA	1000 WATT INCANDESCENT LAMP, 100 VAC (**T/TS/TI ONLY**)
	71.2552.0115	1	EA	1000 WATT INCANDESCENT LAMP, 115 VAC (**T/TS/TI ONLY**)
	71.2552.0230	1	EA	1000 WATT INCANDESCENT LAMP, 230 VAC (**T/TS/TI ONLY**)

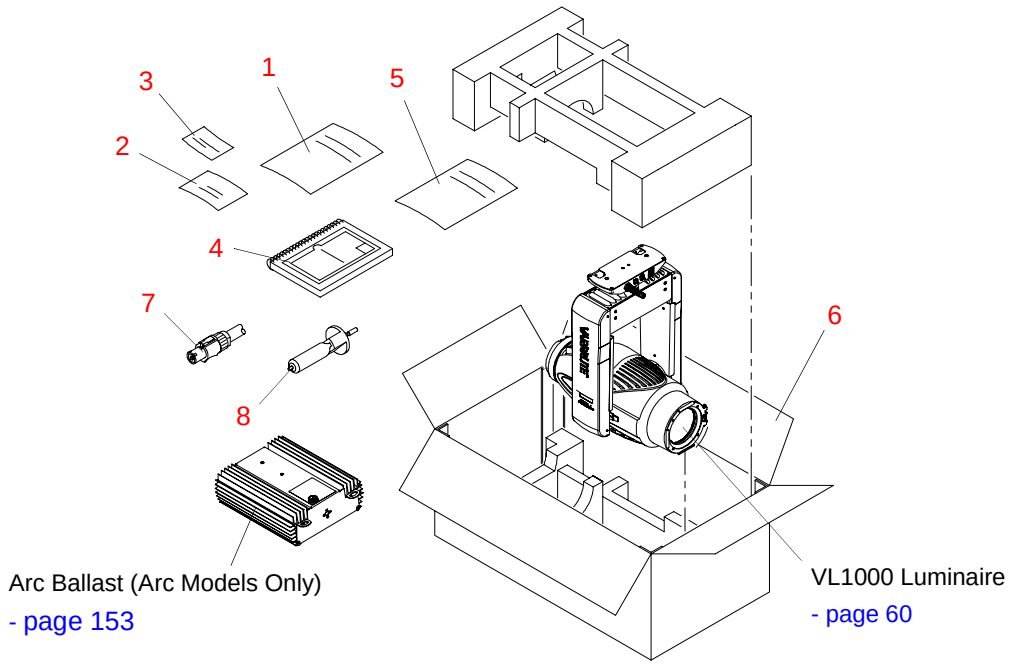


Figure 3-5: Included Items

Label Locations

Rev A

Refer to Figure 3-6.

No.	Item	Qty.	UM.	Description
1	04.9661.0033	1	EA	LABEL, WARNING -2000 SERIES
2	04.9661.0034	1	EA	LABEL, RELAMPING -2000 SERIES
3	04.9661.0037	1	EA	LABEL, 625W ARC -2400 SERIES (**A/AI/AS ONLY**)
4	04.9663.1837	1	EA	LABEL, PATENT
5	04.9663.1860	1	EA	LABEL, 1000 SERIES COMPLIANCE
6	04.9663.1861	1	EA	LABEL, AC INPUT RATING LABEL MODEL **VL1000T**
	04.9663.1862	1	EA	LABEL, AC INPUT RATING LABEL MODEL **VL1000TS**
	04.9663.1863	1	EA	LABEL, AC INPUT RATING LABEL MODEL **VL1000A**
	04.9663.1864	1	EA	LABEL, AC INPUT RATING LABEL MODEL **VL1000AS**
	04.9663.1873	1	EA	LABEL, AC INPUT RATING LABEL MODEL **VL1000TI**
	04.9663.1874	1	EA	LABEL, AC INPUT RATING LABEL MODEL **VL1000AI**
7	04.9663.1865	1	EA	LABEL, 1000 SERIES INCANDESCENT (**T/TI/TS ONLY**)

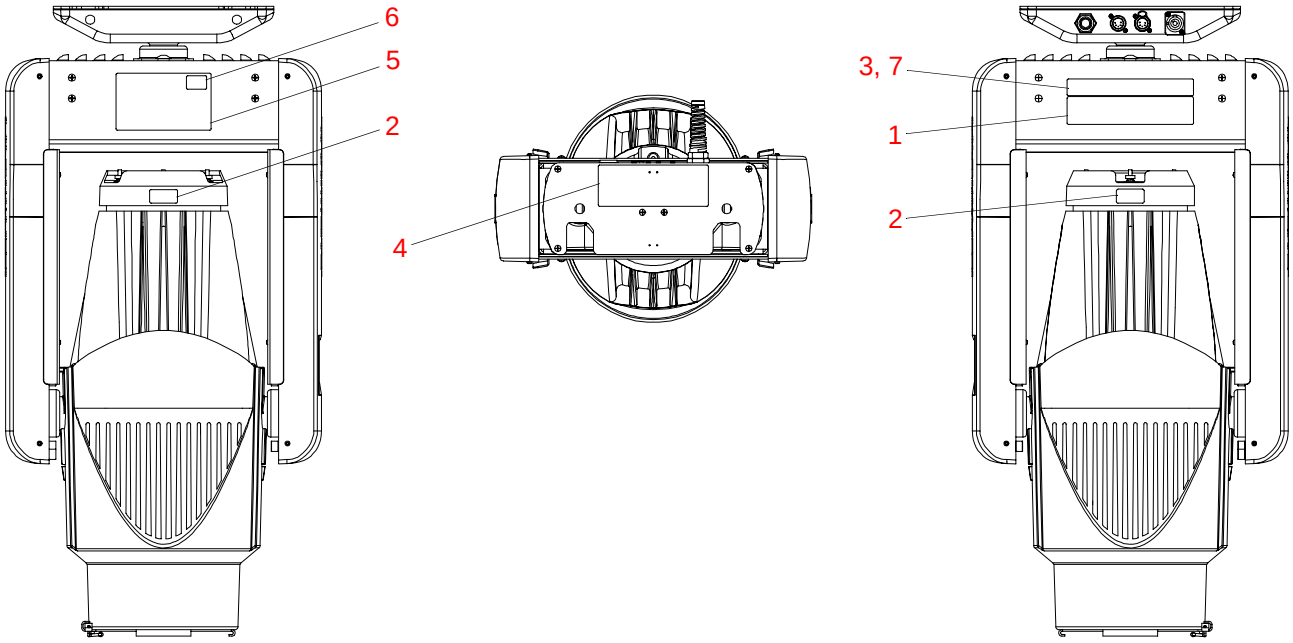


Figure 3-6: Label Locations

VL1000 Luminaire

20.9663.0001.01 (T) Rev D
20.9663.0001.02 (TS) Rev D
20.9663.0001.03 (TI) Rev D
20.9663.0001.11 (A) Rev D
20.9663.0001.12 (AS) Rev D
20.9663.0001.13 (AI) Rev D

Refer to Figure 3-7

No.	Item	Qty.	UM.	Description
1	10.9663.1823	1	EA	PULLEY, TILT
2	10.9663.1824	1	EA	SPACER, TILT TUBE
3	10.9663.1831	1	EA	PLATE, YOKE ARM DISPLAY
4	10.9663.1832	1	EA	OVERLAY, DISPLAY
5	10.9663.1835	1	EA	COVER, YOKE ARM DISPLAY SIDE
6	10.9663.1836	1	EA	COVER, YOKE ARM NO DISPLAY
7	21.9663.1000.01	1	EA	ASSY, HEAD (**T ONLY**)
	21.9663.1000.02	1	EA	ASSY, HEAD W/ SHUTTER (**TS ONLY**)
	21.9663.1000.03	1	EA	ASSY, HEAD W/ IRIS (**TI ONLY**)
	21.9663.1000.11	1	EA	ASSY, HEAD W/ DIMMER (**A ONLY**)
	21.9663.1000.12	1	EA	ASSY, HEAD W/ SHUTTER & DIMMER (**AS ONLY**)
	21.9663.1000.13	1	EA	ASSY, HEAD W/ IRIS (AI **ONLY**)
8	21.9663.1811.01	1	EA	ASSY, CROSSMEMBER (**T, TI & TS ONLY**)
	21.9663.1811.11	1	EA	ASSY, CROSSMEMBER (**A, AI & AS ONLY**)
9	21.9663.1845	1	EA	ASSY, COT FLAG
10	21.9663.1850.01	1	EA	ASSY, YOKE LEGS (**T, TI & TS ONLY**)
	21.9663.1850.11	1	EA	ASSY, YOKE LEGS (**A, AI & AS ONLY**)
11	22.9663.1038	1	EA	ASSY, FRONT COVER
12	24.9663.1930	1	EA	PCB ASSY, VL1000 CONTROLLER
-	25.9663.2019	1	EA	CABLE ASSY, YOKE TO HEAD GROUND - **NOT SHOWN**
-	25.9663.2036	1	EA	CABLE ASSY, IGNITOR TO LAMP (**A/AI/AS ONLY**)- **NOT SHOWN**
-	25.9663.2040		EA	CABLE ASSY, SHUTTER HARNESS (**AS/TS ONLY**) - **NOT SHOWN**
-	25.9663.2050	1	EA	CABLE ASSY, COLOR/GOBO/LENS HARNESS - **NOT SHOWN**
13	53.2019.0004	4	EA	NUT, 3/8-16 X 7/32"THK HEX JAM GRD5 ZINC PLT
14	53.6517.0001	3	EA	SCREW, 10-32 X 3/8"LG PPZ
15	53.6543.0001	8	EA	SCREW, 6-32 X 3/8" PPB

No.	Item	Qty.	UM.	Description
16	53.6612.0001	7	EA	SCREW, 6-32 X 1/2" PPB
17	53.6627.0001	12	EA	SCREW, 10-32 X 5/8" PPB
18	53.6634.0003	4	EA	SCREW, 3/8-16 X 1/2"LG SOC HD CAP ALLY STL
19	53.6642.0001	3	EA	SCREW, 10-32 X 5/8" SLF TAP TYPE F PPZ
20	54.1255.0001	2	EA	BEARING ASSY, BLACK FLUSH MOUNT HOUSING
21	54.2047.0039	1	EA	BELT, TIMING GT 3MM PITCH 350GRV 6MM WD NEOPRENE

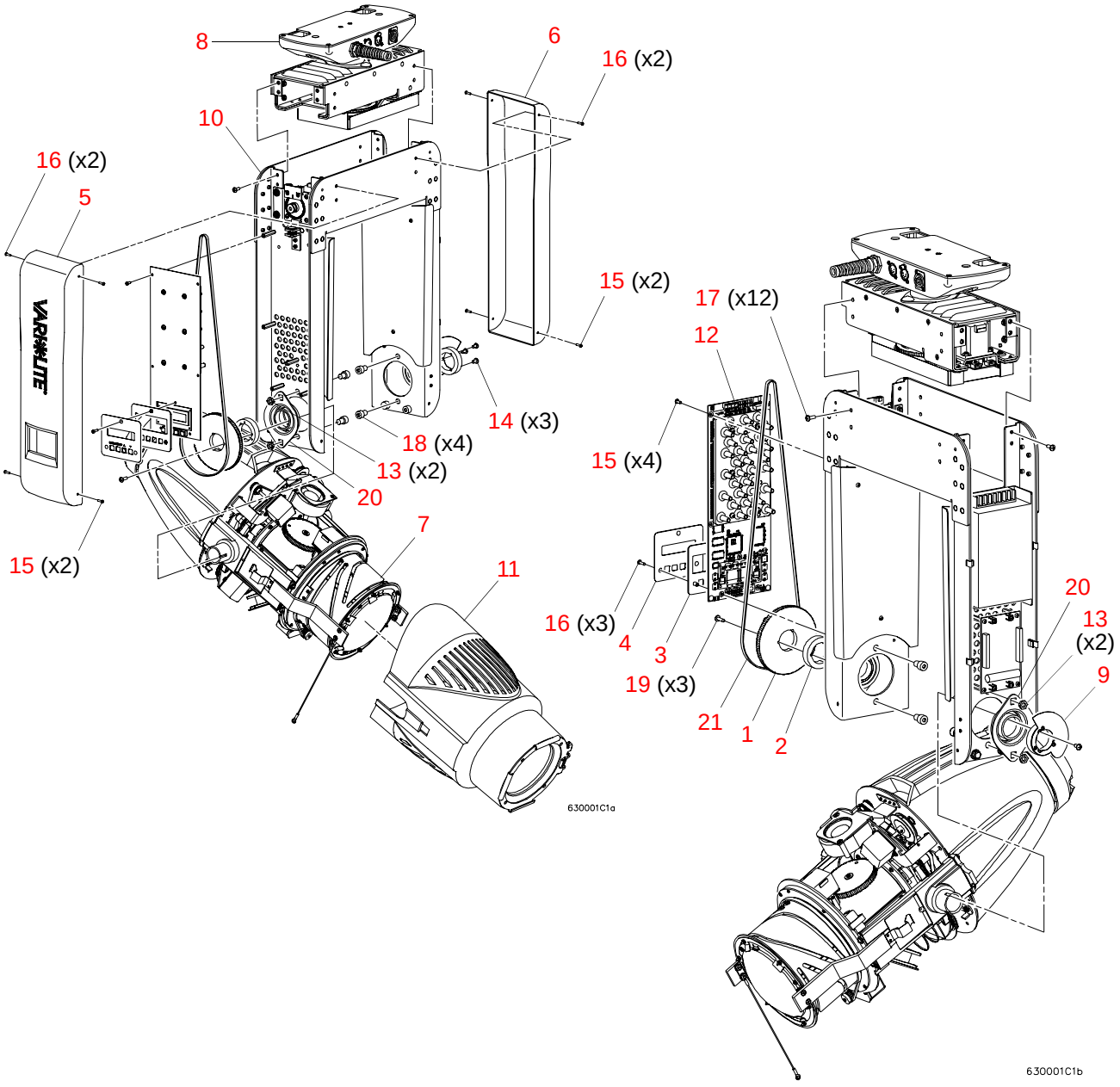


Figure 3-7: VL1000 Luminaire

Front Cover Assembly

22.9663.1038 Rev A

Refer to Figure 3-8.

No.	Item	Qty.	UM.	Description
1	10.9663.1020	1	EA	COVER, FRONT VL1000
2	21.9663.1028	1	EA	ASSY, GEL FRAME HOLDER
3	53.2004.0001	4	EA	NUT, 8-32 KEP
4	53.6545.0007	3	EA	SCREW, 8-32 X 3/8" PFB
5	53.6552.0002	1	EA	SCREW, 8-32 X 1/2" PFB

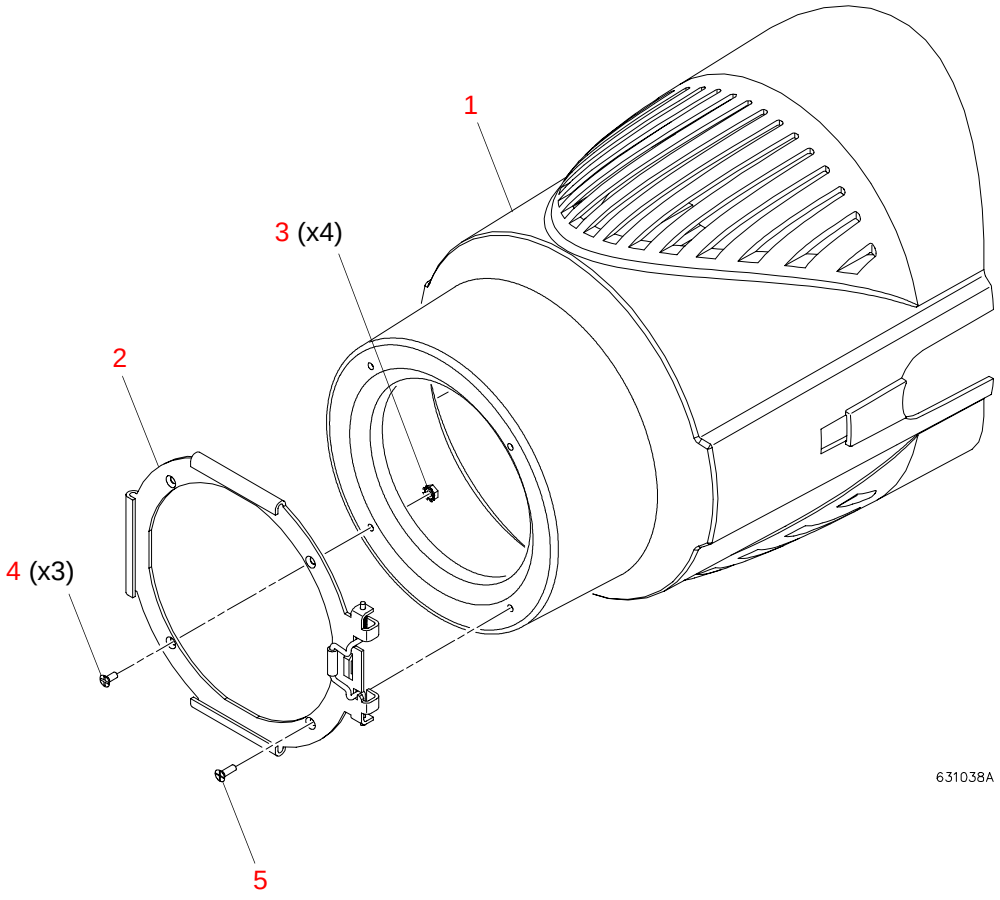


Figure 3-8: Front Cover Assembly

Gel Frame Holder Assembly

21.9663.1028 Rev A

Refer to Figure 3-9.

No.	Item	Qty.	UM.	Description
1	10.9663.1027	1	EA	HOLDER, GEL FRAME
2	10.9663.1031	1	EA	LATCH, GEL FRAME
3	55.6568.0026	1	EA	SPRING, CPRSN .180"OD .810"LG .026" WIRE DIA SS
4	55.6738.0003	.06	FT	TUBING, SILICONE RUBBER 1/8"ID X 1/4"OD TRANSLUCENT

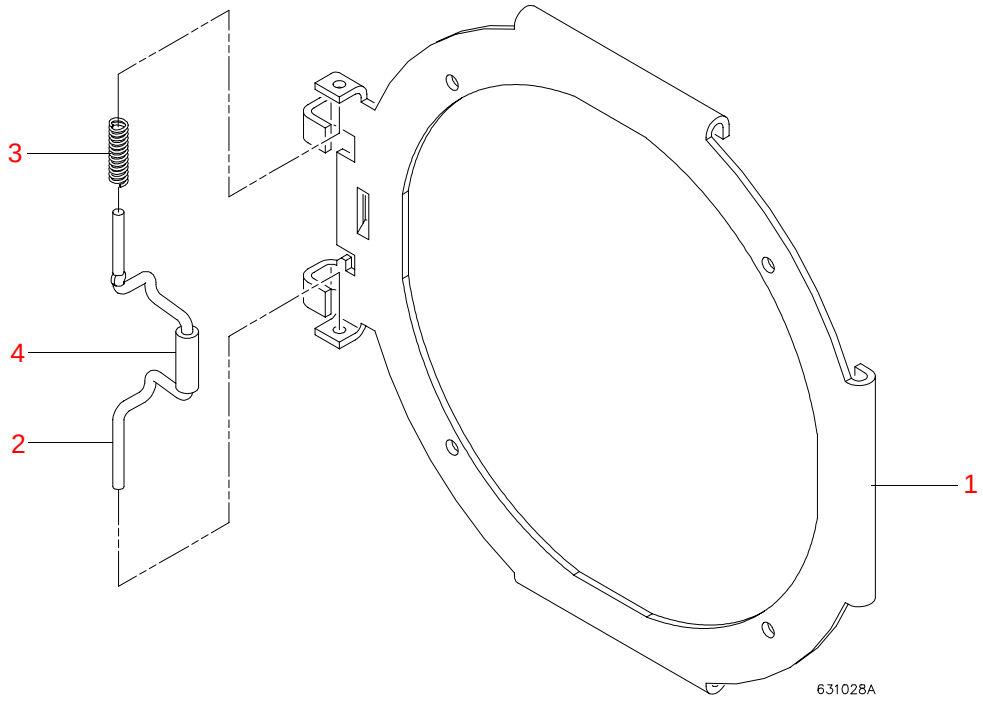


Figure 3-9: Gel Frame Holder Assembly

COT Flag Assembly

21.9663.1845 Rev 0

Refer to Figure 3-10.

No.	Item	Qty.	UM.	Description
1	10.9663.1824	1	EA	SPACER, TILT TUBE
2	10.9663.1826	1	EA	FLAG, CENTER OF TRAVEL -TILT
3	53.6602.0001	3	EA	SCREW, 4-40 X 1/4 " PPZ TYPE F

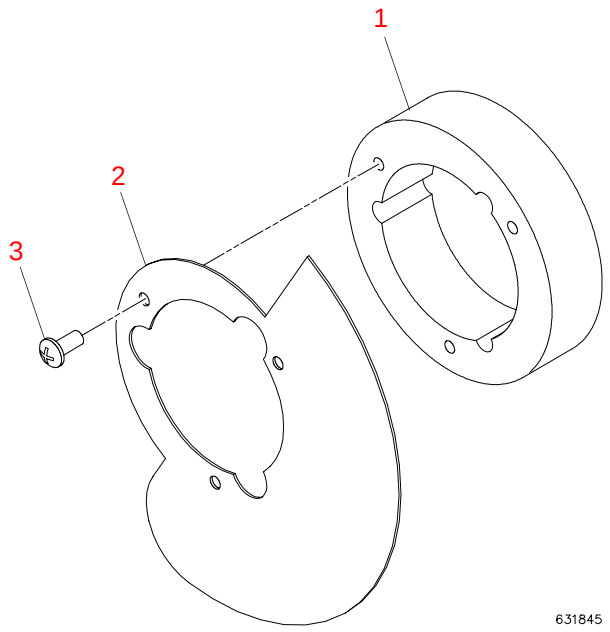


Figure 3-10: COT Flag Assembly

Controller PCB Assembly

24.9663.1930 Rev H

Refer to Figure 3-11.

No.	Item	Qty.	UM.	Description	Ref.
1	10.9663.1840	1	EA	HEAT SINK, MAIN CONTROLLER	-
2	11.9663.1930	1	EA	PCB, VL1000 CONTROLLER	-
3	50.2769.0001	20	EA	SOCKET, 28PIN PLCC SMT	XU9-XU28
4	52.6259.0004	1	EA	HEADER, 4POS, MTA-100 SHROUDED RT ANG	J3
5	52.6445.0005	1	EA	HEADER, 5POS, MTA-100 SHROUDED R/A	J2
6	52.6598.0040	1	EA	HEADER, 20PIN DUAL ROW AMP MODU RT ANG THRU	J4
7	52.6598.0080	1	EA	HEADER, 40PIN DUAL ROW AMP MODU RT ANG THRU	J6
8	52.6598.0100	1	EA	HEADER, 50PIN DUAL ROW AMP MODU RT ANG THRU	J5
9	52.6627.0005	1	EA	HEADER ASSY, 5POS MTA-156 FRCTN LOCK RT ANG .045" SQ	J1
10	52.6631.0001	1	EA	CONNECTOR, ZEBRA ELASTOMERIC	-
11	52.8412.0026	1	EA	CONN, 26 PIN .025" SQ PIN SOCKET SUR MT	J9
12	53.2200.0004	6	EA	NUT, 4-40 KEPS SS	-
13	53.6519.0001	6	EA	SCREW, 4-40 X 5/8" PPZ VL-1	-
14	53.6659.0003	4	EA	SCREW, 2-56 X 3/8"	-
15	55.6569.0001	4	EA	WASHER, LOCK #2 SPLIT RING ZINC STL	-
16	55.6621.0001	6	EA	WASHER, #4 FLAT ZINC	-
17	55.6821.0002	4	EA	STANDOFF, 5/32" RND 2-56 .125" LG BRASS SWAGE TYPE, .105"	-
18	60.1160.0000	2	EA	RES, 1/16W 0 OHM CHIP THK FLM SMT0402	R263 & R266
19	60.1161.2673	24	EA	RES, 1/16W 1% 2.67 K CHIP THK FLM SMT0402	R74, R79, R82, R89, R93, R100, R104,
Ref. for 19 continued:		R111, R168, R173, R176, R183, R187, R194, R198, R205, R212, R218, R221, R227, R230, R236, R239 & R245			
20	60.1161.4323	16	EA	RES, 1/16W 1% 4.32 K CHIP THK FLM SMT0402	R30, R35, R38, R45, R49, R56, R60, R67, R124, R129, R132, R139, R143, R150, R154 & R161

No.	Item	Qty.	UM.	Description	Ref.
21	60.1161.7503	80	EA	RES, 1/16W 1% 7.50 K CHIP THK FLM SMT0402	R33, R36, R37, R42, R43, R47, R48, R53,
Ref. for 21 continued:		R54, R58, R59, R64, R65, R69, R70, R72, R77, R80, R81, R86, R87, R91, R92, R97, R98, R102, R103, R108, R109, R113, R114, R116, R127, R130, R131, R136, R137, R141, R142, R147, R148, R152, R153, R158, R159, R163, R164, R166, R171, R174, R175, R180, R181, R185, R186, R191, R192, R196, R197, R202, R203, R207, R208, R210, R215, R216, R219, R220, R224, R225, R228, R229, R233, R234, R237, R238, R242, R243, R246 & R247			
22	60.1165.1002	9	EA	RES, 1/16W 5% 100 OHM CHIP THK FLM SMT0402	R22-R26, R28, R118, R120 & R277
23	60.1165.1003	25	EA	RES, 1/16W 5% 1.0K CHIP THK FLM SMT0402	R254, R257-R262, R264, R265, R267, R269, R271, R273, R274, R286-R289, R297, R298, R301-R305
24	60.1165.1004	45	EA	RES, 1/16W 5% 10 K CHIP THK FLM SMT0402	R9, R31, R34, R39,
Ref. for 24 continued:		R44, R50, R55, R61, R66, R75, R78, R83, R88, R94, R99, R105, R110, R125, R128, R133, R138, R144, R149, R155, R160, R169, R172, R177, R182, R188, R193, R199, R204, R213, R217, R222, R226, R231, R235, R240, R244, R292, R294, R296 & R306			
25	60.1165.1803	3	EA	RES, 1/16W 5% 1.8 K CHIP THK FLM SMT0402	R2, R3 & R300
26	60.1165.2201	8	EA	RES, 1/16W 5% 22 OHM CHIP THK FLM SMT0402	R249, R250. R251, R253, R283, R284, R285 & R291
27	60.1165.2404	20	EA	RES, 1/16W 5% 24.0 K CHIP THK FLM SMT0402	R32, R40, R51, R62, R76, R84, R95, R106, R126, R134, R145, R156, R170, R178, R189, R200, R214, R223, R232 & R241
28	60.1165.2702	3	EA	RES, 1/16W 5% 270 OHM CHIP THK FLM SMT0402	R13, R122 & R123
29	60.1165.3302	4	EA	RES, 1/16W 5% 330 OHM CHIP THK FLM SMT0402	R8, R290, R293 & R295
30	60.1165.3604	2	EA	RES, 1/16W 5% 36.0 K CHIP THK FLM SMT0402	R1 & R4
31	60.1165.4702	4	EA	RES, 1/16W 5% 470 OHM CHIP THK FLM SMT0402	R5-R7 & R12
32	60.1165.4703	17	EA	RES, 1/16W 5% 4.7 K CHIP THK FLM SMT0402	R27, R29, R119, R121, R248, R252, R255, R256, R268, R270, R272, R275, R276, R278-R280 & R282
33	60.1165.8203	1	EA	RES, 1/16W 5% 8.2K OHM CHIP THK FLM SMT0402	R299
34	60.3242.1000	40	EA	RES, 1W 1% 1.0 OHM WW SUR MT	R14-R21, R41, R46,
Ref. for 34 continued:		R52, R57, R63, R68, R71, R73, R85, R90, R96, R101, R107, R112, R115, R117, R135, R140, R146, R151, R157, R162, R165, R167, R179, R184, R190, R195, R201, R206, R209 & R211			

No.	Item	Qty.	UM.	Description	Ref.
35	60.9460.1502	1	EA	RES, .1W 5% 150.0 OHM 100V CHIP THICK FILM SMT0805	R10
36	60.9466.4703	1	EA	RES, 1/4W 5% 4.7K 200V CHIP THK FLM SMT1210	R11
37	61.4817.1004	1	EA	RES NET,	R281
38	62.4225.0107	8	EA	CAP, 100UF 35V 20% ALUM ELECTRO SUR MT	C240-C244, C246-C248
39	62.4227.0107	2	EA	CAP, 100UF 10V 20% ALUM ELECTRO SUR MT	C238 & C239
40	62.4228.0106	20	EA	CAP, 10UF 50V 20% ALUM ELECTRO SUR MT	C5-C7, C9, C16, C25, C34, C43, C52, C61, C70, C79, C88, C97, C106, C115, C124, C133, C142 & C151
41	62.4240.0103	65	EA	CAP, .01UF 25V 10% CER CHIP SUR MT X7R EIA0603	C13, C18, C22, C27, C31, C36, C40, C45,
Ref. for 41 continued:		C49, C54, C58, C63, C67, C72, C76, C81, C85, C90, C94, C99, C103, C108, C112, C117, C121, C126, C130, C135, C139, C144, C148, C153, C157, C158, C162, C166, C170, C174, C178, C182, C186-C188, C191-C194, C197, C198, C200, C202, C203, C207, C210, C211, C216, C220, C222-C228, C232			
42	62.4240.0104	49	EA	CAP, .1UF 25V 10% CER CHIP SUR MT X7R EIA0603	C1-C4, C8, C14, C23, C32, C41, C50, C59,
Ref. for 42 continued:		C68, C77, C86, C95, C104, C113, C122, C131, C140, C149, C159, C167, C175, C183, C189, C190, C195, C196, C199, C201, C204-C206, C208, C209, C212, C213- C215, C217-C219, C221, C229-C231, C233 & C245			
43	62.4240.0223	40	EA	CAP, .022UF 25V 10% CER CHIP SUR MT X7R EIA0603	C10, C17, C19, C26, C28, C35, C37, C44,
Ref. for 43 continued:		C46, C53, C55, C62, C64, C71, C73, C80, C82, C89, C91, C98, C100, C107, C109, C116, C118, C125, C127, C134, C136, C143, C145, C152, C154, C161, C163, C169, C171, C177, C179 & C185			
44	62.4245.0272	20	EA	CAP, 2700 PF 25V 10% CER CHIP SUR MT X7R EIA0402	C12, C21, C30, C39, C48, C57, C66, C75, C84, C93, C102, C111, C120, C129, C138, C147, C156, C165, C173 & C181
45	62.4245.0471	40	EA	CAP, 470PF 25V 10% CER CHIP SUR MT X7R EIA0402	C11, C15, C20, C24, C29, C33, C38, C42,
Ref. for 45 continued:		C47, C51, C56, C60, C65, C69, C74, C78, C83, C87, C92, C96, C101, C105, C110, C114, C119, C123, C128, C132, C137, C141, C146, C150, C155, C160, C164, C168, C172, C176, C180 & C184			
46	64.4029.0001	1	EA	OSCILLATOR, 40.000 MHZ SM7745HV SUR MT	Y1
47	67.4012.0001	2	EA	FILTER, EMI 600 OHM 1MHZ CHIP FERRITE	FB1 & FB2
48	68.4581.0001	2	EA	INDUCTOR, 100UH 2.22A PE-54037S	L1 & L2
49	70.3763.0001	4	EA	FUSE, PTC 500MA 60V SMD050	PTC1-PTC4

No.	Item	Qty.	UM.	Description	Ref.
50	72.2129.0001	1	EA	DISPLAY, LCD 8 CHARACTER X1 LINE	U40
51	74.1085.0001	4	EA	SWITCH, 12MM TACT MOM N/O	S2-S5
52	74.1085.0011	4	EA	CAP, SWITCH 8MM SQ GREY -TL1100160Q	-
53	74.1097.0001	1	EA	SWITCH, TACT, TIGHT ANGLE, THRU HOLE	S1
54	82.5329.0001	2	EA	DIODE, MBRS340T3 40V 3A SCHOTTKY SUR MT	D12 & D13
55	82.5350.0001	10	EA	DIODE, BAT54SLT1 DUAL SCHOTTKY CATHODE TO ANODE CONNECTED 30V 200MA	D2-D11
56	82.5361.0001	4	EA	DIODE, ZENER TVS 10V 23A SMT	Z1-Z4
57	82.5362.0001	32	EA	DIODE, SCHOTTKY BARRIER RECTIFIER, 40V, 1A, SMT	D17-D48
58	83.3174.0001	1	EA	IC, 2596S VOLTAGE REG 5V TO-263 SUR MT	VR3
59	83.3174.0004	1	EA	IC, LM2596S-3.3 VOLTAGE REGULATOR PWR CONVERTER 150K HZ 3A STEPDOWN 0	VR2
60	83.3198.0001	1	EA	IC, LP3965ES-2.5 LINEAR REGULATOR 1.5A FAST ULTRA LOW DROPOUT	VR1
61	84.4234.0002	1	EA	IC, RS485 TRANSCEIVER SUR MT SOIC PKG	U2
62	84.4297.0002	2	EA	IC, MT48LC4M16A2TG-75 DRAM IMEGX16X4	U31 & U35
63	84.4298.0001	1	EA	IC, MCF5307FT90B INT COLDFIRE MICROPROCESSOR	U33
64	84.4300.0001	1	EA	IC, CY2305SC-1 PLL CLOCK DRIVER 3.3V SMT	U36
65	84.4305.0001	1	EA	IC, NC7SZ04M5 UHS INVERTER-SMT	U8
66	84.7408.0000	1	EA	IC, 74ACT00SC NAND GATE QUAD 2-INPUT ACT LOGIC	U39
67	84.7430.0001	1	EA	IC, MAU202 SIP DC-DC CONVERTER 5VDC	U7
68	85.3773.0001	20	EA	IC, STEPMOTOR DRIVER	U9-28
69	85.5134.0001	1	EA	IC, SN75LBC180D LOW-POWER DIFF LINE DRVR & RCVR PAIRS	U1
70	85.5168.0001	1	EA	IC, DS1834AS DUAL RESET MONITOR W/ PUSHBUTTON SMT	U37
71	86.6105.0001	4	EA	IC, HCPL-0600 OPTO COUPLER SMD	U3-U6
72	87.7188.0001	1	EA	IC, EPIK50QC208-3 (BLANK) ACEX FPGA	U32
73	87.7248.0001	1	EA	IC, AM29LV400BB-44REI 4MEGBIT FLASH MEMORY	U29
74	87.7404.0001	1	EA	IC, M24C02WMN6T EEPROM (BLANK) 2K BIT (256X8) SERIAL I2C BUS	U30
75	88.8145.0001	1	EA	LED, REVERSE MOUNT RED SMT	D1
76	88.8145.0002	2	EA	LED, REVERSE MOUNT GREEN SMT	D15 & D16
77	88.8145.0003	1	EA	LED, REVERSE MOUNT YELLOW SMT	D14

Controller PCB Assembly (continued)

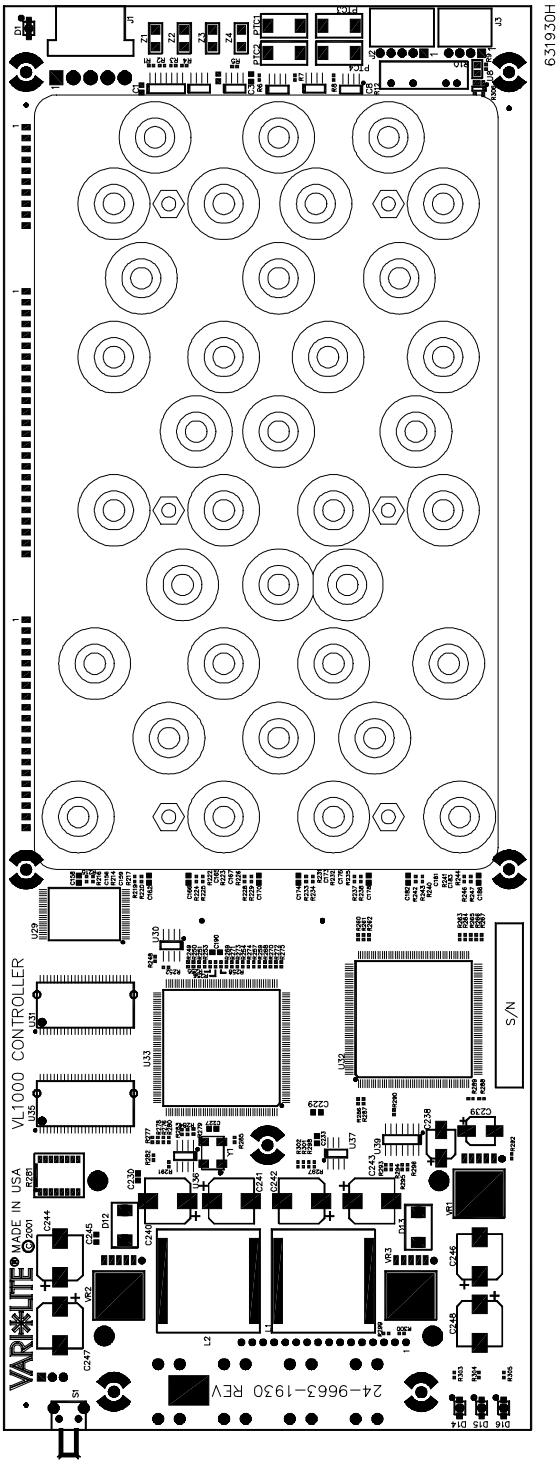


Figure 3-11: Controller PCB Assembly

Notes

Head Assembly

Head Assembly

21.9663.1000.01 (T) Rev B
21.9663.1000.02 (TS) Rev B
21.9663.1000.03 (TI) Rev B
21.9663.1000.11 (A) Rev B
21.9663.1000.12 (AS) Rev B
21.9663.1000.13 (AI) Rev B

Refer to Figure 3-12.

No.	Item	Qty.	UM.	Description
1	10.9663.1032	2	EA	SPACER, SIDE RAIL (**T/TS ONLY**)
		4	EA	SPACER, SIDE RAIL (**A/AS ONLY**)
2	21.9663.1001.01	1	EA	ASSY, FRONT HEAD (**T ONLY**)
	21.9663.1001.02	1	EA	ASSY, FRONT HEAD (**TS ONLY**)
	21.9663.1001.03	1	EA	ASSY, FRONT HEAD (**TI ONLY**)
	21.9663.1001.11	1	EA	ASSY, FRONT HEAD (**A ONLY**)
	21.9663.1001.12	1	EA	ASSY, FRONT HEAD (**AS ONLY**)
	21.9663.1001.13	1	EA	ASSY, FRONT HEAD (**AI ONLY**)
3	21.9663.1002.01	1	EA	ASSY, REAR HEAD (**T/TS ONLY**)
	21.9663.1002.11	1	EA	ASSY, REAR HEAD (**A/AS ONLY**)
4	53.6627.0001	4	EA	SCREW, 10-32 X 5/8" PPB
5	55.3303.0010	4	EA	WASHER, #10 .438"OD .040"THK SPLIT LOCK SS

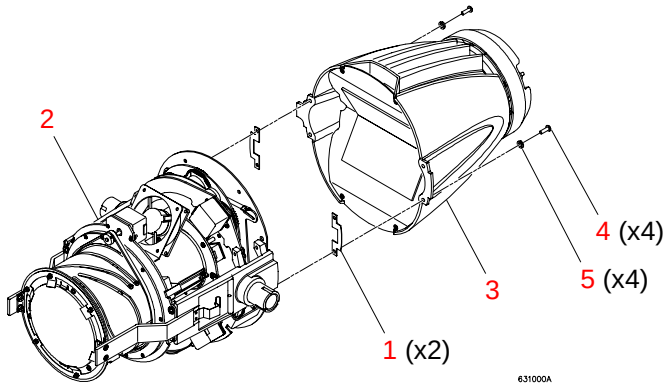


Figure 3-12: Head Assembly

Front Head Assembly

21.9663.1001.01 (T) Rev G
21.9663.1001.02 (TS) Rev G
21.9663.1001.03 (TI) Rev G
21.9663.1001.11 (A) Rev G
21.9663.1001.12 (AS) Rev G
21.9663.1001.13 (AI) Rev G

Refer to Figure 3-13.

No.	Item	Qty.	UM.	Description
1	07.5049.0001	1	EA	LANYARD, NYLON COATED 8" LG
2	21.9663.1003	1	EA	ASSY, EDGE, ZOOM & COLOR
3	21.9663.1033	1	EA	ASSY, SIDE RAIL, PULLEY
4	21.9663.1034	1	EA	ASSY, SIDE RAIL, SENSOR
5	21.9663.1200	1	EA	ASSY, GOBO BULKHEAD, INCANDESCENT (**T/TS ONLY**)
	21.9663.1600	1	EA	ASSY, GOBO/DIMMER BULKHEAD, ARC (**A/AS ONLY**)
6	21.9663.1250	1	EA	ASSY, APERTURE (**T/A ONLY**)
7	21.9663.1300	1	EA	ASSY, SHUTTER (**TS/AS ONLY**) (**OLD VERSION**)
	21.9663.1350	1	EA	ASSY, SHUTTER 6 ROLLERS (**TS/AS ONLY**) (**NEW VERSION**)
8	21.9663.1400	1	EA	ASSY, IRIS (**TI/AI ONLY**)
9	53.6552.0002	4	EA	SCREW, 8-32 X 1/2" PFB
10	53.2004.0002	4	EA	NUT, 8-32 KEPS ZINC PLATE
11	53.6627.0001	12	EA	SCREW, 10-32 X 5/8" PPB
12	55.3303.0010	12	EA	WASHER, #10 .438"OD .040THK SPLIT LOCK SS

Front Head Assembly (continued)

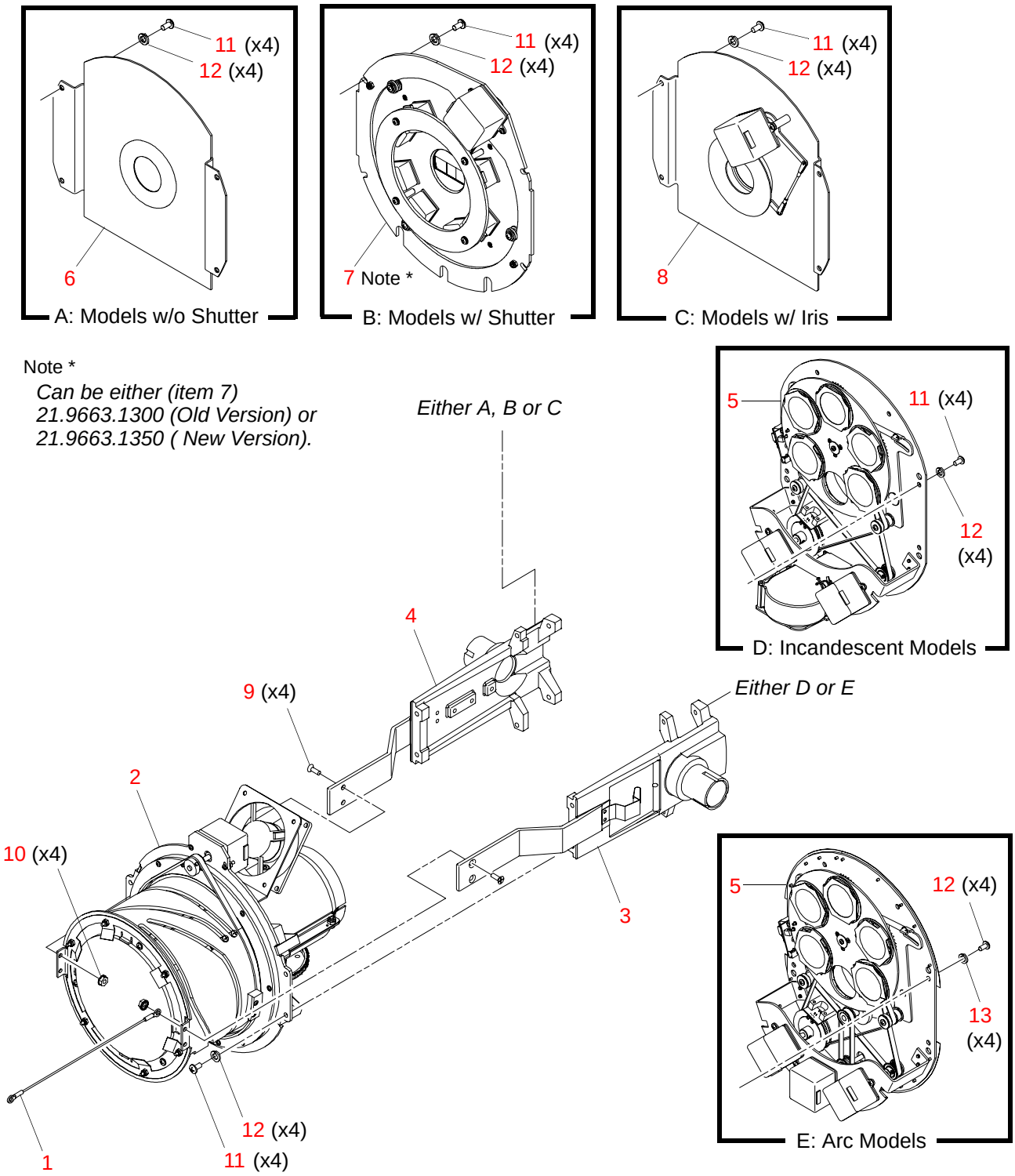


Figure 3-13: Front Head Assembly

Edge Control, Zoom, Dimmer & Color Assembly

21.9663.1003 Rev D

Refer to Figure 3-14.

No.	Item	Qty.	UM.	Description
1	10.9663.1039	1	EA	SUPPORT, AXIAL FAN
2	10.9663.1755	3	EA	ROLLER, BARREL
3	10.9663.1756	6	EA	ROLLER, LENS
4	10.9663.1757	1	EA	CLAMP, BELT BASE
5	10.9663.1758	1	EA	BELT CLAMP
6	10.9663.1767	1	EA	ZOOM TEFLON SPACER
7	10.9663.1790	1	EA	BELT PULLEY, GT 3MM PITCH 16 GROOVES
8	12.9663.1754	1	EA	MACHINED EXTRUSION, OUTER BARREL ZOOM
9	21.9663.1500	1	EA	ASSY, COLOR CHANGER
10	21.9663.1760	1	EA	ASSY, LENS #6
11	21.9663.1770	1	EA	ASSY, LENS #7
12	21.9663.1780	1	EA	ASSY, LENS #8
13	23.9663.2009	1	EA	CABLE ASSY, FAN TEMP SWITCH
14	44.9663.1766	1	EA	MOTOR, 17 1.24" SHAFT 11.8MH 5.5 OHM
15	53.2003.0001	2	EA	NUT, 4-40 KEP ZINC PLATED
16	53.2202.0006	4	EA	NUT, 6-32 HEX SS NYLON INSERT
17	53.5506.0750	6	EA	SCREW, 6-32 X 3/4 " PPSS
18	53.5604.0437	2	EA	SCREW, 4-40 X 7/16"LG PPSS BLACK
19	53.5606.0375	7	EA	SCREW, 6-32 X 3/8 " PPSS BLACK
20	53.6558.0003	2	EA	SCREW, 6-32 X 3/8" PPZ PLASTIC THREAD ROLLING
21	53.6567.0001	2	EA	SCREW, 4-40 X 1/2" PPZ
22	54.2048.0002	1	EA	BELT, TIMING HTD 3MMPITCH 195 GROOVE 6MMWIDE
23	55.3301.0006	2	EA	WASHER, #6 FLAT SS
24	55.3303.0006	3	EA	WASHER, #6 LOCK INT.TOOTH SS
25	55.6588.0003	3	EA	SPACER, 1/4"RND #6 THRU 1/8"LG .140"ID ZINC PLT BRS

Edge Control, Dimmer & Color Assembly (continued)

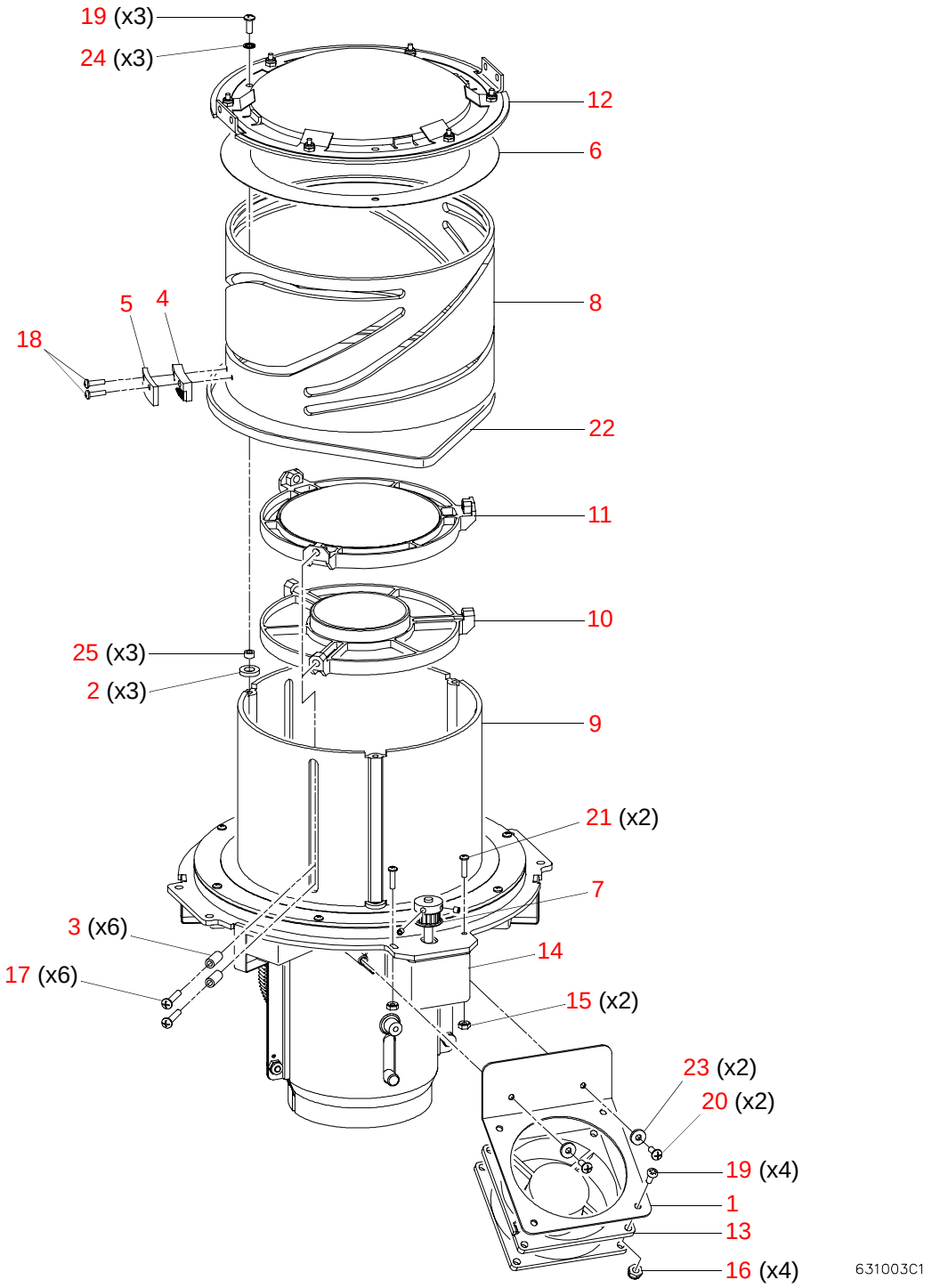


Figure 3-14: Edge Control, Dimmer & Color Assembly

Color Changer Assembly

21.9663.1500 Rev K

Refer to Figure 3-15.

No.	Item	Qty.	UM.	Description
1	04.9663.1524	1	EA	LABEL, MAGENTA MOTOR
2	04.9663.1525	1	EA	LABEL, BLUE MOTOR
3	04.9663.1526	1	EA	LABEL, AMBER MOTOR
4	04.9663.1527	1	EA	LABEL, DIFFUSER MOTOR
5	10.9663.1505	4	EA	DRIVE RING
6	10.9663.1506	1	EA	DIFFUSER COVER PLATE
7	10.9663.1507	2	EA	COLOR SEPERATOR
8	10.9663.1508	1	EA	MOTOR MOUNT PLATE
9	10.9663.1509	1	EA	COLOR COVER PLATE, LINER SHEET
10	10.9663.1510	1	EA	DIFFUSER COVER PLATE LINER SHEET
11	10.9663.1511	3	EA	COLOR SPACER 1
12	10.9663.1512	1	EA	DRIVE RING LOCATOR
13	10.9663.1514	3	EA	COLOR SPACER 2
14	10.9663.1515	1	EA	DIFFUSER SPACER 1
15	10.9663.1516	1	EA	DIFFUSER SPACER 2
16	10.9663.1518	4	EA	COLOR MOTOR MOUNT CLIP
17	10.9663.1521	1	EA	COLOR COVER PLATE, LINER SHEET
18	10.9663.1522	1	EA	DIFFUSER COVER PLATE, LINER SHEET
19	10.9663.1532	2	EA	RING SPACER
20	10.9663.1537	1	EA	DRIVE RING LOCATOR BEARING STRIP W/PSA
21	10.9663.1755	3	EA	ROLLER, BARREL
22	10.9663.1767	1	EA	ZOOM TEFLON SPACER
23	12.9663.1752	1	EA	MACHINED EXTRUSION, INNER BARREL ZOOM
24	21.9663.1501	4	EA	ASSY, COLOR CHANGER DRIVE MOTOR
25	21.9663.1534	1	EA	ASSY, COVER PLATE
26	21.9663.1538.01	2	EA	ASSY, MAGENTA COLOR FILTER
	- 10.9663.1504	1	EA	FILTER CARRIER
	- 41.9663.1502.01	1	EA	FILTER, COLOR MAGENTA
27	21.9663.1538.02	2	EA	ASSY, BLUE COLOR FILTER
	- 10.9663.1504	1	EA	FILTER CARRIER

No.	Item	Qty.	UM.	Description
	- 41.9663.1502.02	1	EA	FILTER, COLOR BLUE
28	21.9663.1538.03	2	EA	ASSY, AMBER COLOR FILTER
	- 10.9663.1504	1	EA	FILTER CARRIER
	- 41.9663.1502.03	1	EA	FILTER, COLOR AMBER
29	21.9663.1538.04	2	EA	ASSY, DIFFUSER GLASS RIGHT
	- 10.9663.1504	1	EA	FILTER CARRIER
	- 42.9663.1503	1	EA	DIFFUSER GLASS
30	21.9663.1710	1	EA	ASSY, BARREL
31	53.2002.0003	4	EA	NUT, 6-32 HEX ZINC NYLON INSERT
32	53.2200.0004	8	EA	NUT, 4-40 KEPS SS
33	53.5636.0375	3	EA	SCREW, 6-32 X 3/8 " PFSS BLACK
34	53.6556.0001	8	EA	SCREW, 4-40 X 3/4"LG PPZ
35	55.6588.0003	3	EA	SPACER, 1/4"RND #6 THRU 1/8"LG .140"ID ZINC PLT BRS

Color Changer Assembly (continued)

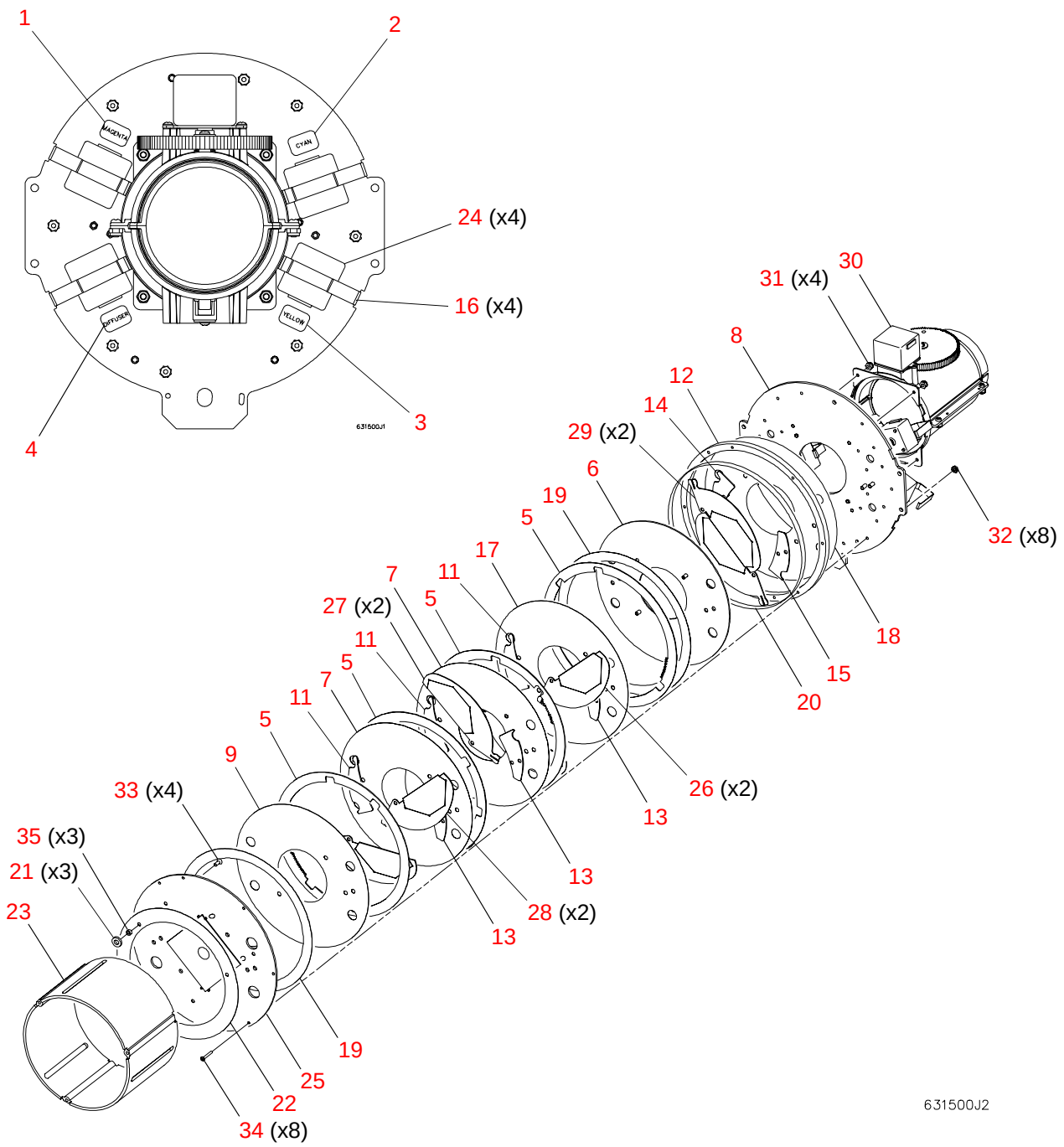


Figure 3-15: Color Changer Assembly

Color Changer Drive Motor

21.9663.1501 Rev C

Refer to Figure 3-16.

No.	Item	Qty.	UM.	Description
1	10.9663.1513	1	EA	GEAR, PINION 8 TOOTH 32 PITCH
2	44.9663.1520	1	EA	MOTOR, 14 .47" SHAFT 10.8MH 10.1 OHM
3	55.6677.0002	1	EA	WASHER, .360"OD .123"ID .025" THK FLAT NYLON

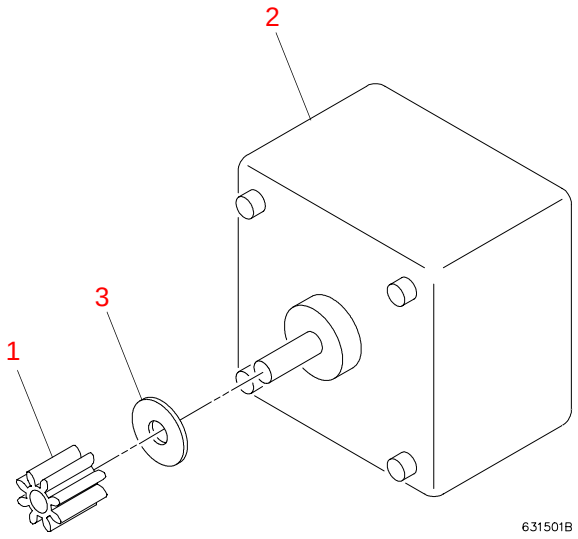


Figure 3-16: Color Changer Drive Motor

Cover Plate Assembly

21.9663.1534 Rev 0

Refer to Figure 3-17.

No.	Item	Qty.	UM.	Description
1	10.9663.1517	1	EA	COVER PLATE, COLOR CHANGER
2	10.9663.1535	1	EA	DISC, .63 DIA ALUM
3	41.9663.1530	1	EA	GLASS, BEAM OCCLUSION
4	53.6659.0008	4	EA	SCREW, 2-56 X 3/16" PFZ

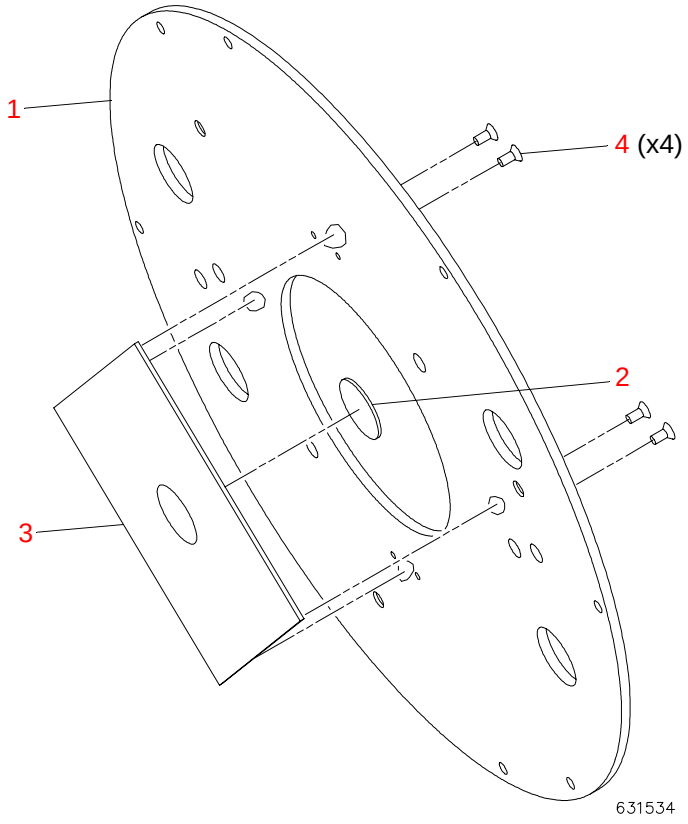


Figure 3-17: Cover Plate Assembly

Barrel Assembly

21.9663.1710 Rev B

Refer to Figure 3-18.

No.	Item	Qty.	UM.	Description
1	10.9663.1701	2	EA	BARREL, HALF OUTER LENS EDGE SYSTEM
2	10.9663.1708	1	EA	EDGE GEAR/CAM, 8 ELEMENT SYSTEM
3	10.9663.1711	2	EA	BARREL, HALF INNER LENS EDGE SYSTEM
4	10.9663.1737	1	EA	EDGE, LIGHT BAFFLE
5	21.9663.1722	1	EA	ASSY, EDGE MOTOR
	- 10.9663.1709	1	EA	PINION, EDGE
	- 44.9663.1326	1	EA	MOTOR, 17 .53" SHAFT 11.8MH 5.5 OHM
6	42.9663.1728	1	EA	LENS #1
7	42.9663.1731	1	EA	LENS #4
8	42.9663.1732	1	EA	LENS #5
9	42.9663.1736	1	EA	ASSY, LENS #2 & #3
10	53.2202.0006	4	EA	NUT, 6-32 HEX SS NYLON INSERT
11	53.6558.0001	4	EA	SCREW, 6-32 X 3/8" PPZ
12	53.6558.0003	4	EA	SCREW, 6-32 X 3/8" PPZ PLASTIC THREAD ROLLING
13	55.2123.0012	1	EA	WASHER, WAVE SPRING .484"OD .397"ID .009"THK CSTL
14	55.6636.0003	2	EA	WASHER, .562"OD .156"ID .046"THK #6 FLAT ZINC PLT

Barrel Assembly (continued)

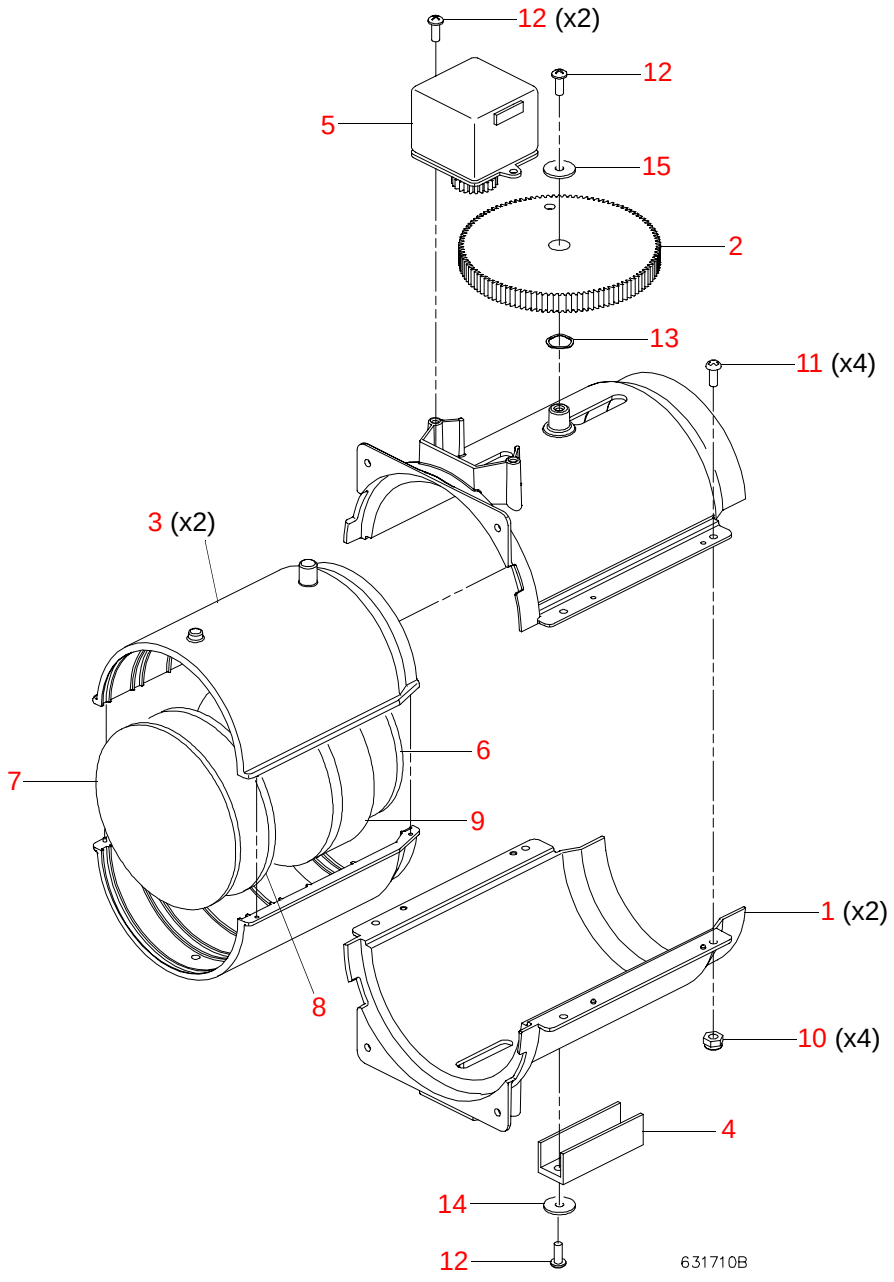


Figure 3-18: Barrel Assembly

Lens #6 Assembly

21.9663.1760 Rev 0

Refer to Figure 3-19.

No.	Item	Qty.	UM.	Description
1	10.9663.1761	1	EA	LENS CARRIER, MOLDED -LENS #6 ASSY
2	42.9663.1733	1	EA	LENS #6

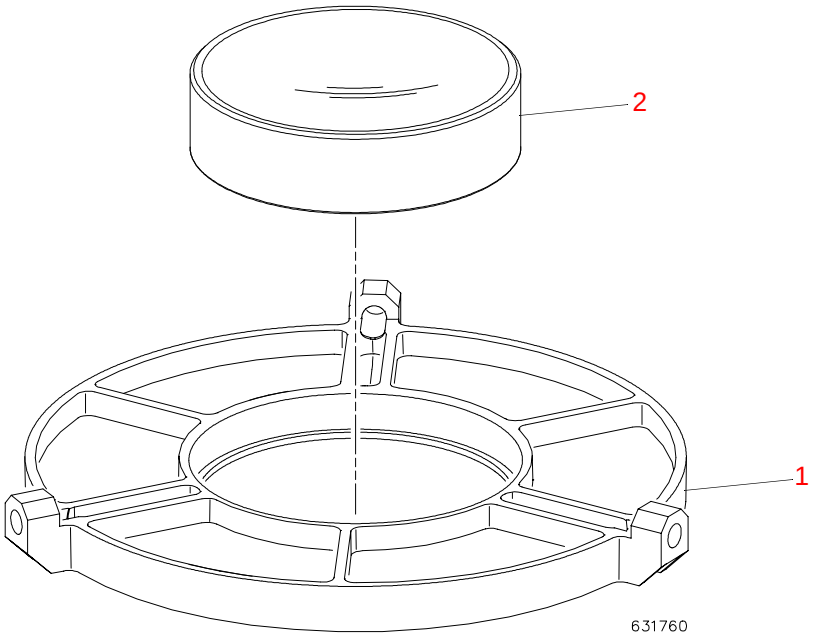


Figure 3-19: Lens #6 Assembly

Lens #7 Assembly

21.9663.1770 Rev 0

Refer to Figure 3-20.

No.	Item	Qty.	UM.	Description
1	10.9663.1771	1	EA	LENS CARRIER, MOLDED -LENS #7
2	42.9663.1734	1	EA	LENS #7

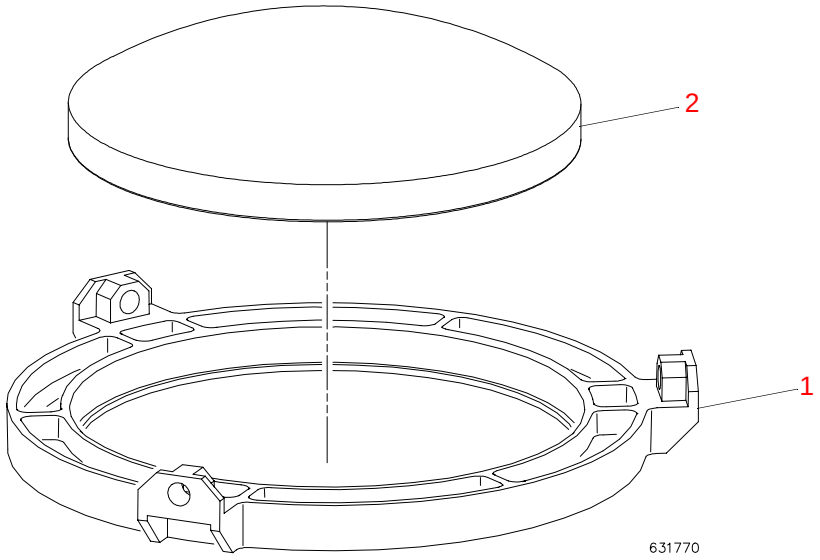


Figure 3-20: Lens #7 Assembly

Lens #8 Assembly

21.9663.1780 Rev B

Refer to Figure 3-21.

No.	Item	Qty.	UM.	Description
1	10.9663.1781	1	EA	BULKHEAD, FRONT -LENS #8 ASSY
2	10.9663.1782	1	EA	RING, RETAINING FRONT LENS
3	42.9663.1735	1	EA	LENS #8
4	53.2202.0004	6	EA	NUT, 4-40 HEX SS NYLON INSERT
5	53.6559.0001	6	EA	SCREW, 4-40 X 1/4" PFZ

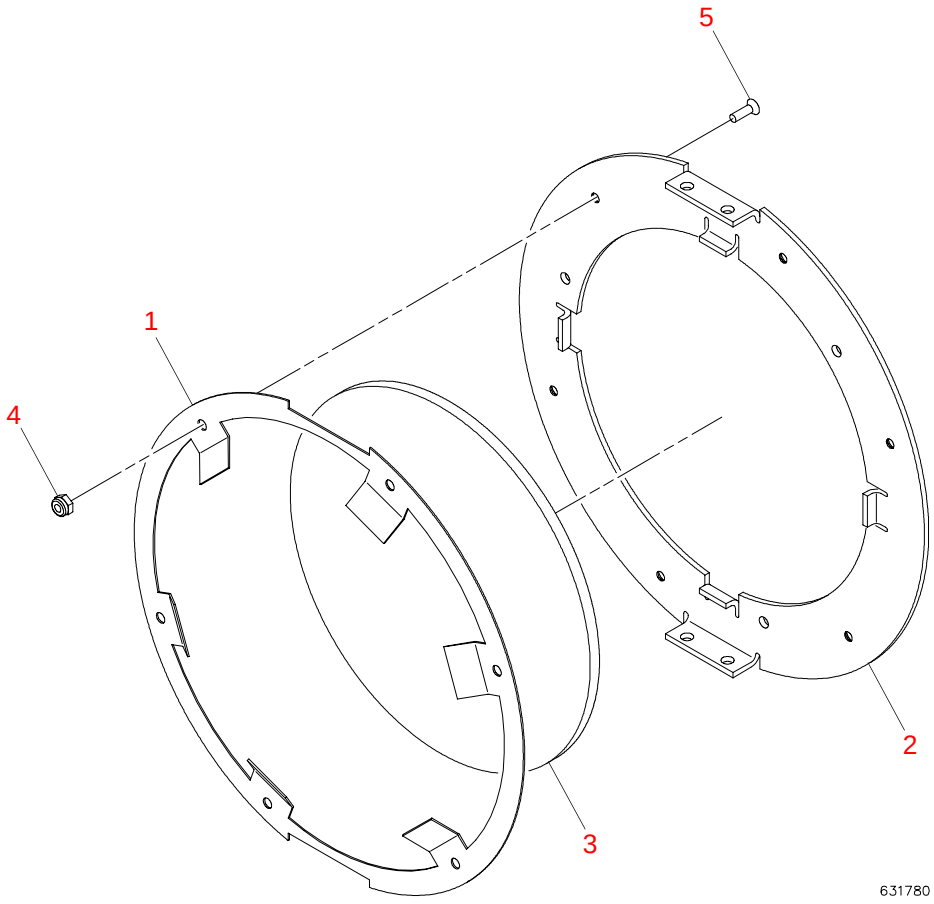


Figure 3-21: Lens #8 Assembly

Fan Assembly

23.9663.2009 Rev C

Refer to Figure 3-22.

No.	Item	Qty.	UM.	Description
1	40.7113.0003	1	EA	FAN, +24V 80X80X25MM 24LFM
2	52.6523.0002	1	EA	CONN, HOUSING 2POS PLUG SHROUDED WIRE TO WIRE
3	52.8347.0001	2	EA	CONTACT, 24-30AWG MALE CRIMP

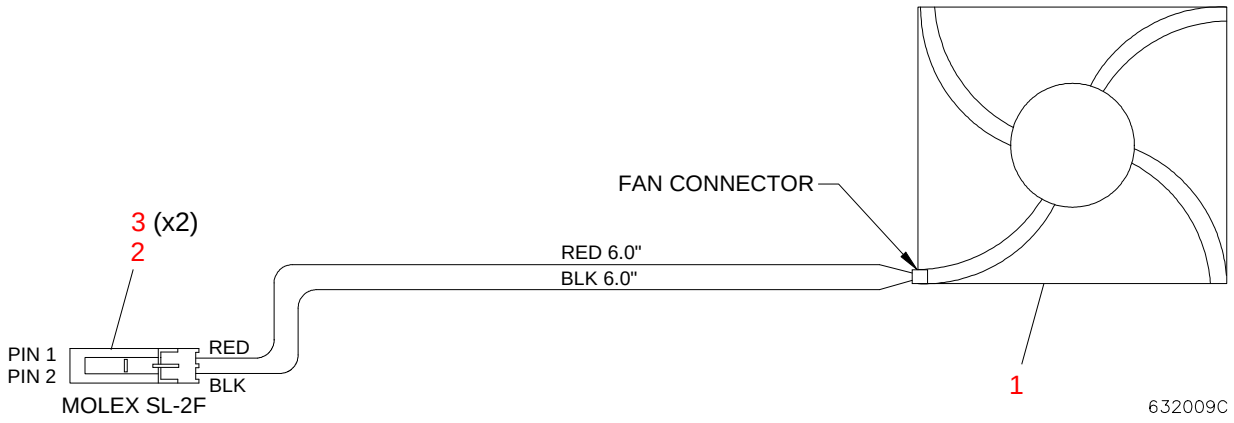


Figure 3-22: Fan Assembly

Pulley Side Rail Assembly

21.9663.1033 Rev B

Refer to Figure 3-23.

No.	Item	Qty.	UM.	Description
1	10.9663.1026	1	EA	LATCH, SPRING
2	12.9663.1025	1	EA	RAIL, SIDE MACHINED LONG TILT TUBE
3	53.2002.0004	1	EA	NUT, 6-32 ACORN THREADLOCKING SS
4	53.5636.0500	1	EA	SCREW, 6-32 X 1/2" PFSS BLACK
5	53.6530.0009	2	EA	RIVET, 1/8"OD POP .126-.187GL STL BODY STL MNDRL DOME
6	55.5178.0002	1	EA	CABLE ANCHOR MOUNT, #10 SCREW MOUNTING

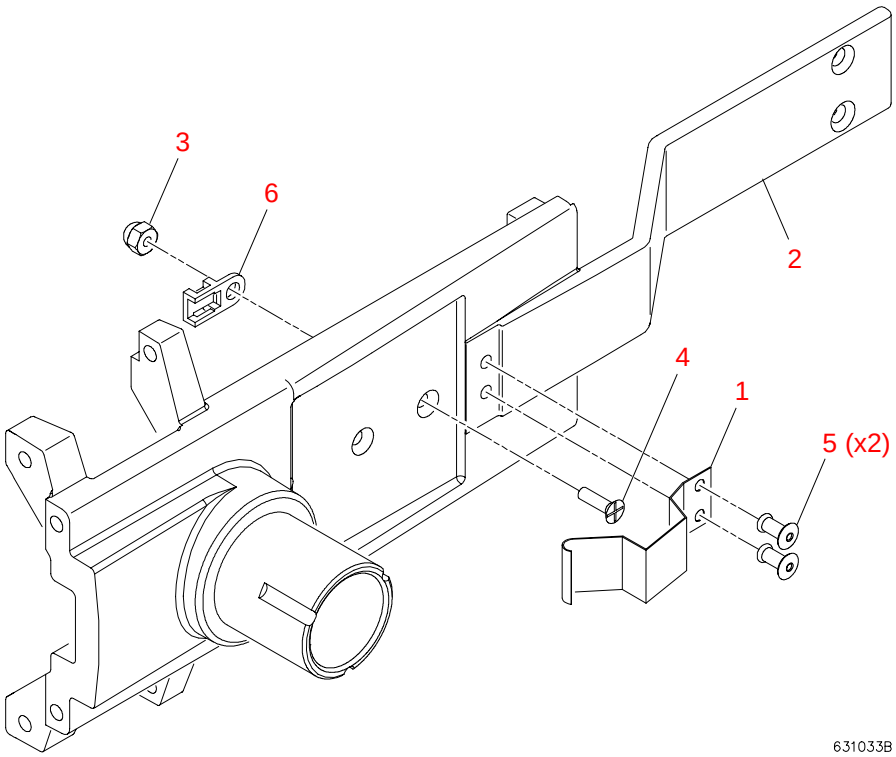


Figure 3-23: Pulley Side Rail Assembly

Sensor Side Rail Assembly

21.9663.1034 Rev B

Refer to Figure 3-24.

No.	Item	Qty.	UM.	Description
1	10.9663.1026	1	EA	LATCH, SPRING
2	12.9663.1029	1	EA	RAIL, SIDE MACHINED SHORT TILT TUBE
3	53.2002.0004	1	EA	NUT, 6-32 ACORN THREADLOCKING SS
4	53.5636.0625	1	EA	SCREW, 6-32 X 5/8" PFSS BLACK
5	53.6530.0009	2	EA	RIVET, 1/8"OD POP .126-.187GL STL BODY STL MNDRL DOME
6	55.6623.0004	1	EA	WASHER, #10 FLAT SS .203ID .625OD .050 THK

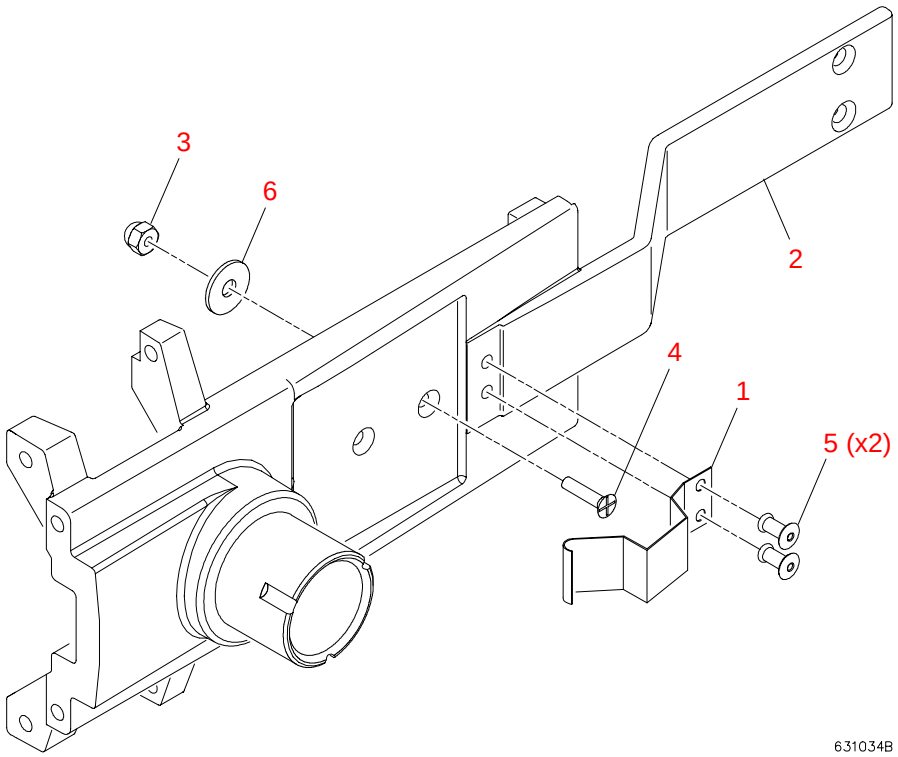


Figure 3-24: Sensor Side Rail Assembly

Incandescent Gobo Wheel Assembly

21.9663.1200 (T/TS) Rev P

Refer to Figure 3-25.

No.	Item	Qty.	UM.	Description
1	10.9663.1212	1	EA	PULLEY, MOTOR -GOBO
2	10.9663.1214	1	EA	SHAFT, ROTATING GOBO
3	10.9663.1217	1	EA	PULLEY, GOBO DRIVE MOTOR MOUNTED
4	10.9663.1241	2	EA	PULLEY, IDLER TEFLON
5	10.9663.1242	2	EA	SPACER, PIVOT BELT ADJUST
6	10.9663.1228	1	EA	PLATE, GOBO IDLER MOUNT PLATE
7	10.9663.1229	1	EA	PLATE, WHEEL IDLER MOUNT
8	10.9663.1236	2	EA	MOUNT, SENSOR BOARD
9	21.9663.1201	1	EA	ASSY, GOBO WHEEL
10	22.9663.1226	1	EA	ASSY, GOBO BULKHEAD
11	23.9663.1248.01	1	EA	ELEC ASSY, TEMPERATURE SENSOR
12	24.9663.1230	1	EA	PCB ASSY, WHEEL SENSOR
13	24.9663.1231	1	EA	PCB ASSY, INDEX SENSOR
14	44.9663.1202	2	EA	MOTOR, 17 2.42" SHAFT 11.8MH 5.5 OHM
15	53.2003.0001	3	EA	NUT, 4-40 KEPS ZINC PLATED
16	53.5560.0187	4	EA	SCREW, 8-32 X .187" SET CONE POINT
17	53.6520.0001	1	EA	SCREW, 4-40 X 3/8" PPZ
18	53.6524.0002	4	EA	SCREW, 6-32 X 5/16" PPB
19	53.6530.0022	2	EA	RIVET, 1/8"OD POP .188-250GRP CSK HD AL W/STL MNDRL
20	53.6530.0023	1	EA	RIVET, 1/8"OD POP .376-.500GRP DOME HD W/STL MNDRL
21	53.6537.0001	1	EA	SCREW, 4-40 X 5/8" PPB (VL 1)
22	53.6543.0001	1	EA	SCREW, 6-32 X 3/8" PPB
23	53.6581.0001	2	EA	SCREW, 4-40 X 1 3/8" PFZ
24	53.6598.0312	4	EA	SCREW, 4-40 X 5/16" PFB
25	53.6600.0001	3	EA	SCREW, 4-40 X 5/16" PPB
26	53.6614.0001	2	EA	SCREW, 6-32 X 5/8" PPB
27	54.2045.0002	1	EA	BELT, TIMING MXL .080" PITCH .187W 250 TEETH SILICONE
28	54.9663.1220	1	EA	BELT, TIMING INDEX
29	55.2123.0003	2	EA	WASHER, WAVE SPRING W0367-006-S
30	55.6506.0010	1	EA	SPACER, 1/4" RND .375" LG .140" ID THRU AL NO FNSH

No.	Item	Qty.	UM.	Description
31	55.6512.0001	1	EA	WASHER, #4 SPLIT LOCK
32	55.6538.0001	1	EA	SCREW, #6 LOCK INTERNAL TOOTH
33	55.6568.0061	2	EA	SPRING, EXTSN .250"OD 2.00"LG .022" WIRE DIA MUSIC WIRE
34	55.6609.0005	2	EA	WASHER, .625"OD .376"ID .020"THK FLAT TEFLON
35	55.6621.0001	1	EA	WASHER, #4 FLAT ZINC
36	55.6677.0035	1	EA	WASHER, .750"OD .187"ID .030"THK FLAT SS
37	55.6677.0036	1	EA	WASHER, .875"OD .406"ID .030"THK FLAT SS
38	55.6677.0039	2	EA	WASHER, .438"OD .219"ID .042"THK #12 FLAT CSTL
39	55.6677.0040	5	EA	WASHER, .624"OD .145"ID .030"THK FLAT BLACK OXIDE
40	55.6677.0042	1	EA	WASHER, .500"OD .145"ID .031"THK FLAT TEFLON
41	55.6706.0001	1	EA	GROMMET, 9/32"ID 9/16"OD 1/4T SILICONE RED
42	55.6818.0002	1	EA	STANDOFF, 45 DEG NYLON 6/6 KURLY-LOK

Incandescent Gobo Wheel Assy (continued)

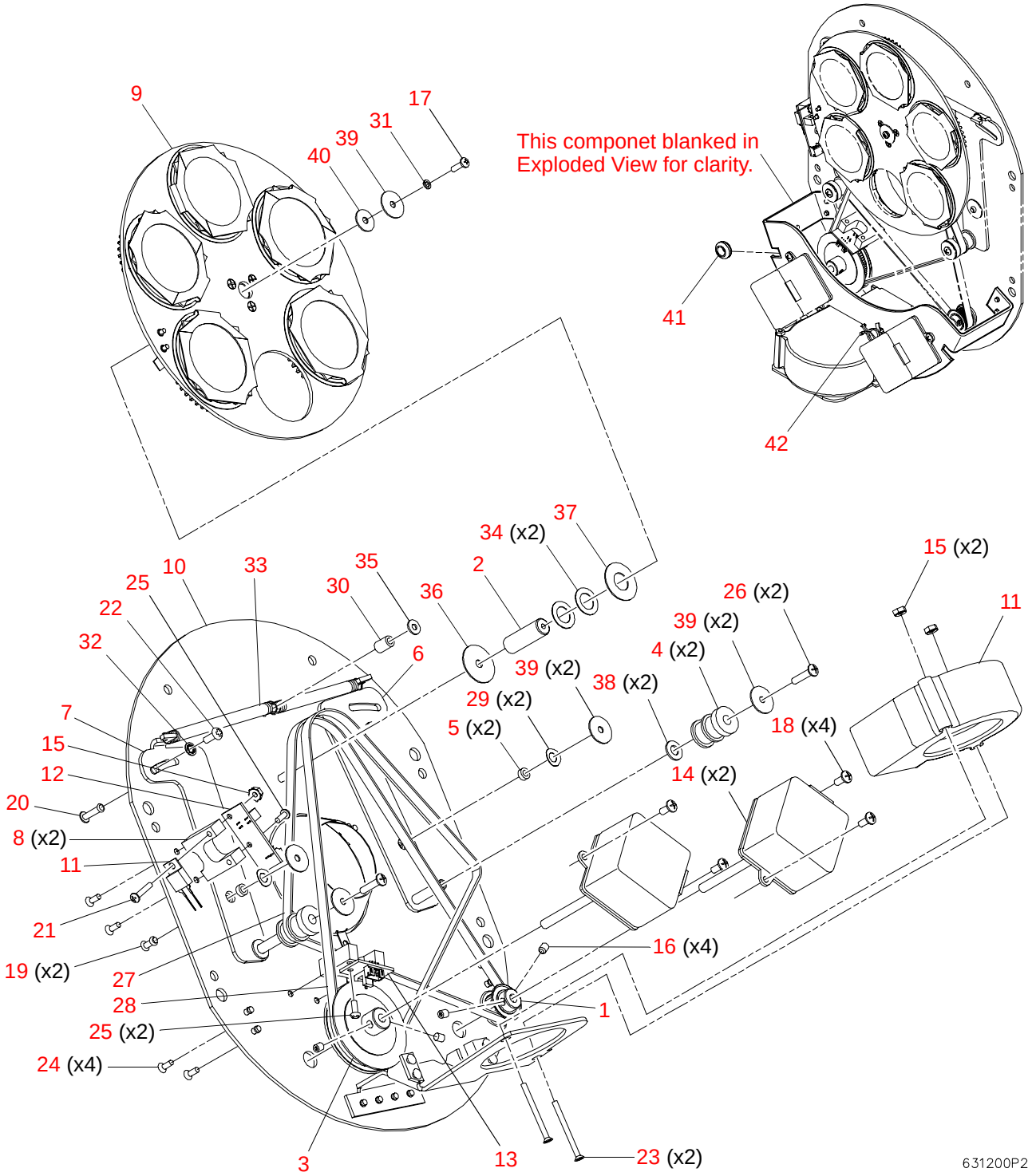


Figure 3-25: Incandescent Gobo Wheel Assembly

Temperature Sensor Electrical Assembly

23.9663.1248.01 (T/TS) Rev A
23.9663.1248.11 (A/AS) Rev A

Refer to Figure 3-26.

No.	Item	Qty.	UM.	Description
1	23.9663.2008	1	EA	ASSY, FAN (**T ONLY**)
	- 40.7140.0001	1	EA	BLOWER, CENTRIFUGAL 24VDC 9CFM 3" X 3"
	- 52.8347.0001	2	EA	CONTACT, 24-30AWG MALE CRIMP
2	52.6523.0004	1	EA	CONN, HOUSING 4POS PLUG SHROUDED WIRE TO WIRE
3	52.8347.0001	2	EA	CONTACT, 24-30AWG MALE CRIMP
4	55.2198.0001	.17	FT	HEATSHRINK 1/8" BLACK
5	63.2047.0001	1	EA	THERMOSTANT, 100 DEG C PCB MOUNT CLOSE ON RISE
6	73.3524.0002	2.5	FT	WIRE 24AWG 300V 105C PVC RED UL1007

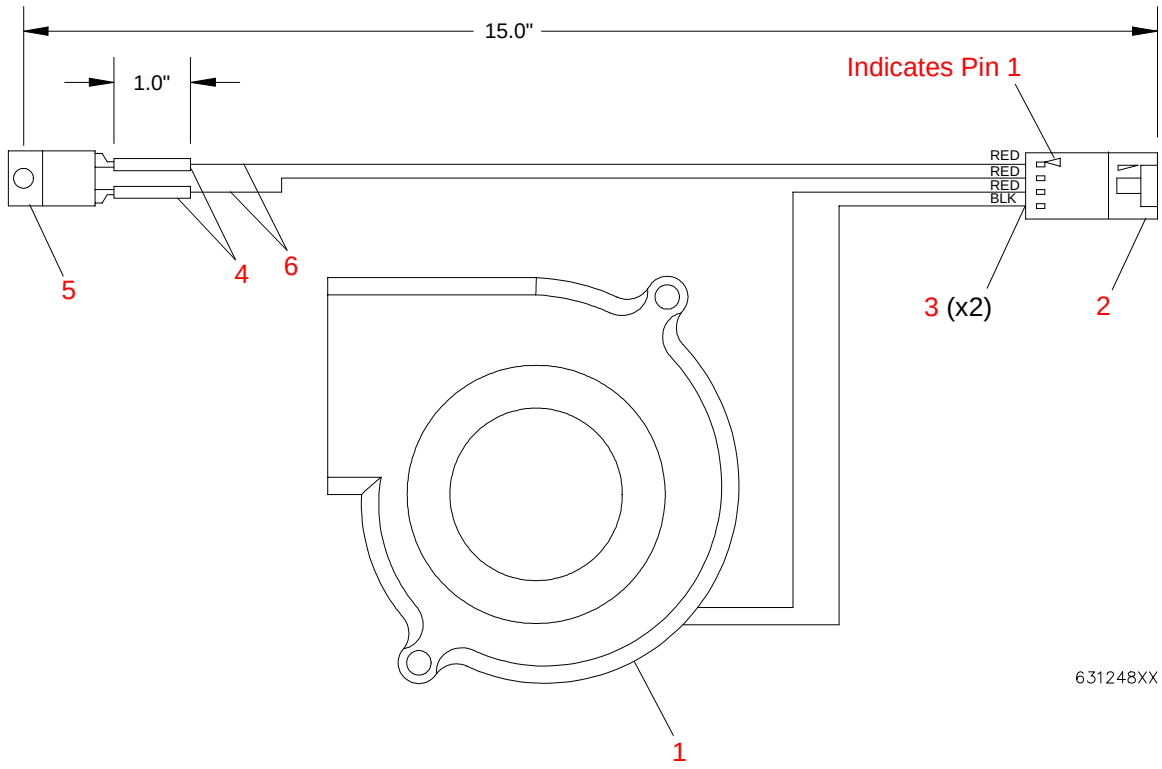


Figure 3-26: Temperature Sensor Electrical Assembly

Arc Gobo/Dimmer Bulkhead Assembly

21.9663.1600 (A/AS) Rev N

Refer to Figure 3-27.

No.	Item	Qty.	UM.	Description
1	10.9663.1212	2	EA	PULLEY, MOTOR -GOBO
2	10.9663.1214	1	EA	SHAFT, ROTATING GOBO
3	10.9663.1217	1	EA	PULLEY, GOBO DRIVE MOTOR MOUNTED
4	10.9663.1228	1	EA	PLATE, GOBO IDLER MOUNT PLATE
5	10.9663.1229	1	EA	PLATE, WHEEL IDLER MOUNT
6	10.9663.1236	2	EA	MOUNT, SENSOR BOARD
7	10.9663.1241	2	EA	PULLEY, IDLER TEFLON
8	10.9663.1242	2	EA	SPACER, PIVOT BELT ADJUST
9	10.9663.1621	1	EA	PULLEY, W/FLANGES 26GROOVE .25 WIDE MXL-DIMMER/GOBO ASSY
10	10.9663.1625	1	EA	SHAFT, DIMMER .250 OD
11	10.9663.1627	1	EA	FLANGED BUSHING, DIMMER
12	10.9663.1630	2	EA	SEAL, COVER LONG
13	10.9663.1631	2	EA	SEAL, COVER SHORT
14	10.9663.1632	2	EA	PLATE, COVER SEAL LONG
15	10.9663.1633	2	EA	PLATE, COVER SEAL SHORT
16	21.9663.1201	1	EA	ASSY, GOBO WHEEL
17	22.9663.1232	1	EA	FAB ASSY, DIMMER/GOBO BULKHEAD
18	22.9663.1629	1	EA	GLASS, DIMMER WHEEL
19	23.9663.1248.11	1	EA	ELEC ASSY, TEMPERATURE SENSOR
20	24.9663.1230	1	EA	PCB ASSY, WHEEL SENSOR
21	24.9663.1231	1	EA	PCB ASSY, INDEX SENSOR
22	44.9663.1202	3	EA	MOTOR, 17 2.42" SHAFT 11.8MH 5.5 OHM
23	53.2002.0001	1	EA	NUT, 6-32 KEP ZINC PLATED
24	53.2003.0001	1	EA	NUT, 4-40 KEP ZINC PLATED
25	53.6520.0001	1	EA	SCREW, 4-40 X 3/8" PPZ
26	53.5560.0187	10	EA	SCREW, 8-32 X .187" SET CONE POINT
27	53.6524.0002	6	EA	SCREW, 6-32 X 5/16" PPB
28	53.6530.0022	2	EA	RIVET, 1/8"OD POP .188-250GRP CSK HD AL W/STL MNDRL
29	53.6530.0023	1	EA	RIVET, 1/8"OD POP .376-500GRP DOME HD W/STL MNDRL
30	53.6534.0001	18	EA	RIVET, 3/32"OD POP 3/32GRIP RANGE ALUM

No.	Item	Qty.	UM.	Description
31	53.6537.0001	1	EA	SCREW, 4-40 X 5/8" PPB (VL 1)
32	53.6543.0001	1	EA	SCREW, 6-32 X 3/8" PPB
33	53.6598.0312	7	EA	SCREW, 4-40 X 5/16" PFB
34	53.6600.0001	3	EA	SCREW, 4-40 X 5/16" PPB
35	53.6614.0001	2	EA	SCREW, 6-32 X 5/8" PPB
36	53.6682.0002	2	EA	SCREW, 4-40 X 1/4"LG PPZ SEMS-EXT
37	54.2045.0002	1	EA	BELT, TIMING MXL .080" PITCH .187W 250 TEETH SILICONE
38	54.2050.0001	1	EA	BELT, TIMING MXL .080" PITCH 93 TEETH 1/4" WD SILICONE
39	54.9663.1220	1	EA	BELT, TIMING INDEX
40	55.2123.0003	2	EA	WASHER, WAVE SPRING W0367-006-S
41	55.6506.0010	1	EA	SPACER, 1/4" RND .375"LG .140"ID THRU AL NO FNSH
42	55.6512.0001	3	EA	WASHER, #4 SPLIT LOCK
43	55.6538.0001	1	EA	WASHER, #6 LOCK INTERNAL TOOTH
44	55.6568.0061	2	EA	SPRING, EXTSN .250"OD 2.00"LG .022" WIRE DIA MUSIC WIRE
45	55.6609.0005	2	EA	WASHER, .625"OD .376"ID .020"THK FLAT TEFLON
46	55.6621.0001	3	EA	WASHER, #4 FLAT SINC
47	55.6659.0007	2	EA	STANDOFF, 3/16"HEX 4-40 .250"LG ALUM
48	55.6677.0035	1	EA	WASHER, .750"OD .187"ID .030"THK FLAT SS
49	55.6677.0036	1	EA	WASHER, .875"OD .406"ID .030"THK FLAT SS
50	55.6677.0039	2	EA	WASHER, .438"OD .219"ID .042"THK #12 FLAT CSTL
51	55.6677.0040	5	EA	WASHER, .624"OD .145"ID .030"THK FLAT BLACK OXIDE
52	55.6677.0042	1	EA	WASHER, .500"OD .145"ID .031"THK FLAT TEFLON
53	55.6706.0001	1	EA	GROMMET, 9/32" ID 9/16" OD 1/4T SILICONE RED
54	55.6818.0002	1	EA	STANDOFF, 45 DEG NYLON 6/6 KURLY-LOK

Arc Gobo/Dimmer Bulkhead (continued)

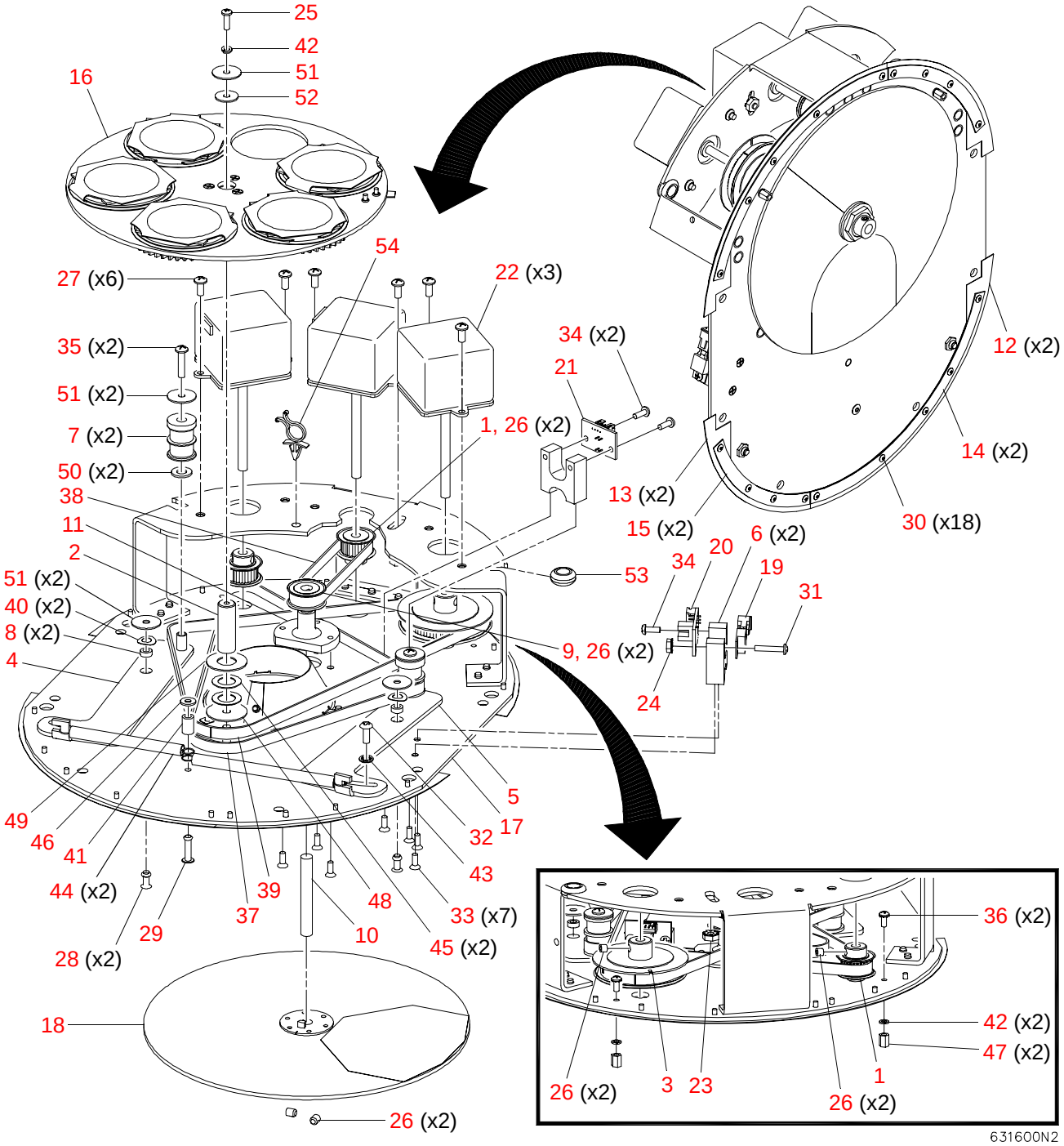


Figure 3-27: Arc Gobo/Dimmer Bulkhead Assembly

Gobo Wheel Assembly

21.9663.1201 Rev B

Refer to Figure 3-28.

No.	Item	Qty.	UM.	Description
1	10.9663.1203	5	EA	GEAR, PLANET CAST
2	10.9663.1204	1	EA	WHEEL, ROTATING GOBO
3	10.9663.1206	1	EA	FLANGE, MIDDLE
4	10.9663.1210	5	EA	CLIP, RETAINING
5	10.9663.1211	10	EA	SPACER, TEFLON GOBO GEAR
6	10.9663.1219	1	EA	SUN GEAR, MOLDED
7	10.9663.1247	1	EA	TAB, GOBO WHEEL SENSOR
8	10.9663.1240	5	EA	BEARING, GOBO WHEEL BORE
9	22.9663.1222	1	EA	PULLEY ASSY, GOBO WHEEL
10	41.9663.1207	5	EA	BLANK, GOBO
11	53.6534.0001	2	EA	RIVET, 3/32" OD, 3/32 GRIP RANGE, ALUM
12	53.6598.0312	3	EA	SCREW, 4-40 X 5/16" PFB

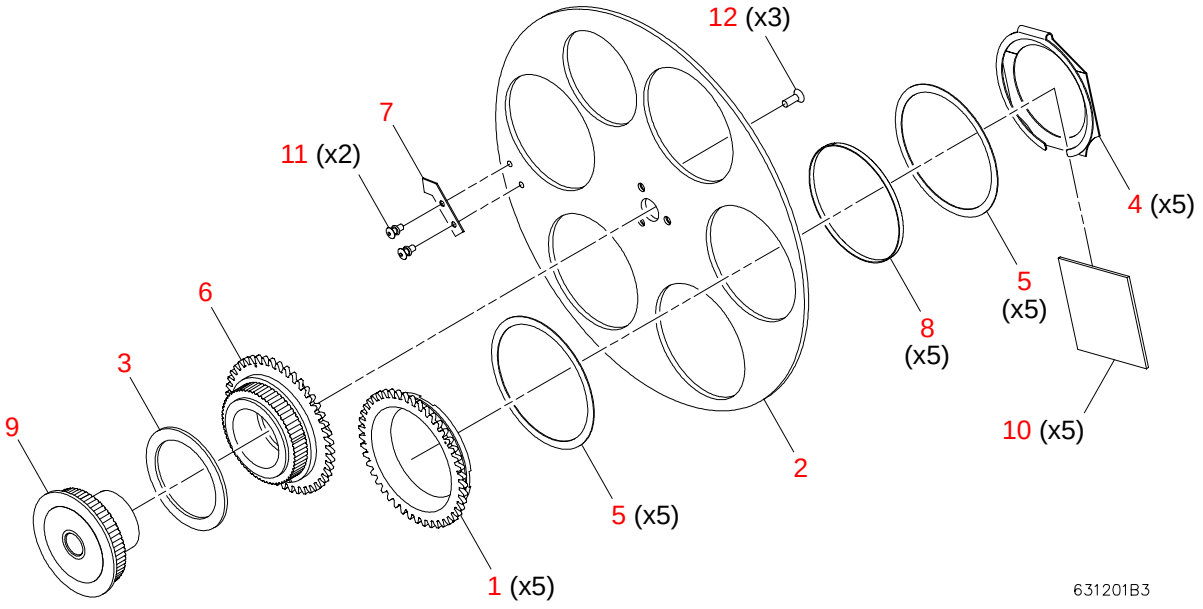


Figure 3-28: Gobo Wheel Assembly

Gobo Bulkhead FAB Assembly

22.9663.1226 Rev M

Refer to Figure 3-29.

No.	Item	Qty.	UM.	Description
1	10.9663.1213	1	EA	BULKHEAD, GOBO MOUNT
2	10.9663.1224	1	EA	PLATE, GOBO MOTOR MOUNT
3	10.9663.1225	1	EA	BRACKET, FAN MOUNT/BRACE
4	10.9663.1238	1	EA	LIGHT CONE
5	53.6540.0003	4	EA	RIVET, 1/8"OD .126" - .187"GL DOME HD CLOSED END AL BODY
6	53.6540.0004	8	EA	RIVET, 1/8"OD .126"- .187"GL CSK HD CLOSED END AL BODY
7	53.6540.0005	3	EA	RIVET, 1/8"OD .063"- .125"GL CSK HD CLOSED END AL BODY

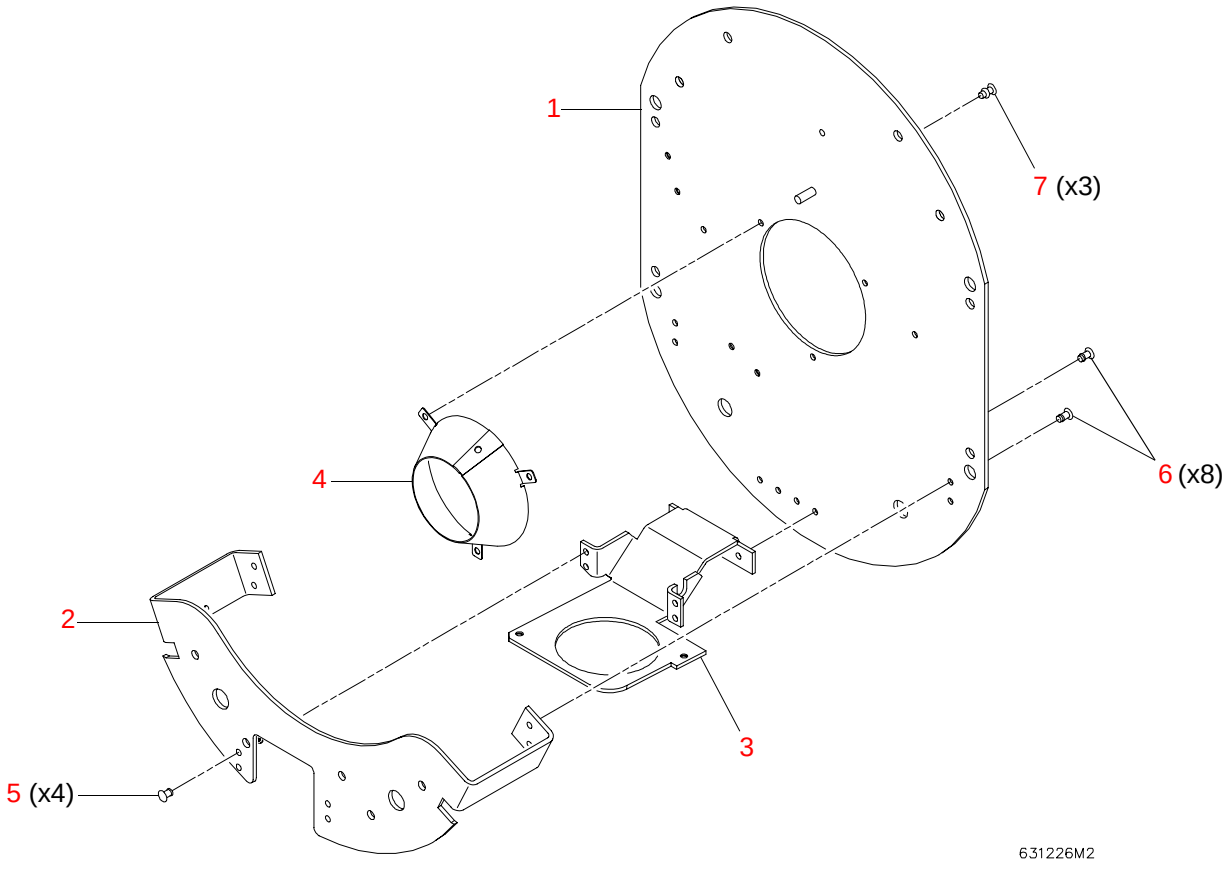


Figure 3-29: Gobo Bulkhead FAB Assembly

Gobo/Dimmer Bulkhead FAB Assembly

22.9663.1232 Rev L

Refer to Figure 3-30.

No.	Item	Qty.	UM.	Description
1	10.9663.1233	1	EA	BULKHEAD, DIMMER/GOBO MOUNT
2	10.9663.1234	1	EA	PLATE, DIMMER/GOBO MOTOR MOUNT
3	10.9663.1238	1	EA	LIGHT CONE
4	53.6540.0004	10	EA	RIVET, 1/8"OD .126"- .187"GL CSK HD CLOSED END AL BODY

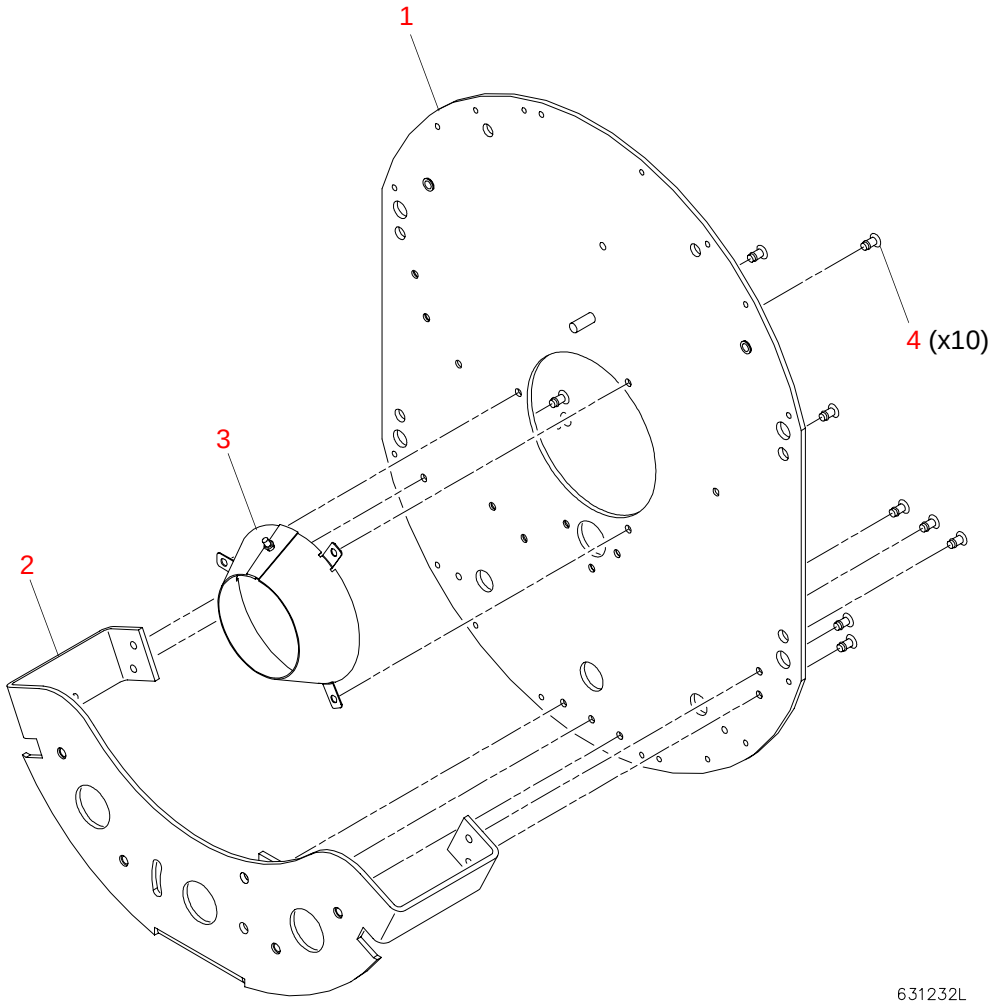


Figure 3-30: Gobo/Dimmer Bulkhead FAB Assembly

Dimmer Wheel Assembly

22.9663.1629 Rev D

Refer to Figure 3-31.

No.	Item	Qty.	UM.	Description
1	10.9663.1624	1	EA	WHEEL MOUNT, DIMMER
2	10.9663.1626	1	EA	WASHER, SILICONE
3	10.9663.1628	1	EA	SHIM, DIMMER WHEEL BLACKOUT
4	41.9663.1622	1	EA	GLASS, DIMMER WHEEL
5	53.2212.0001	1	EA	NUT, THIN, 5/8" -27 NS THD 3/4 HEX WIDTH 1/8" HIGH
6	55.3309.0001	1	EA	WASHER 1" OD .625" ID .062" THK 18-8 SS

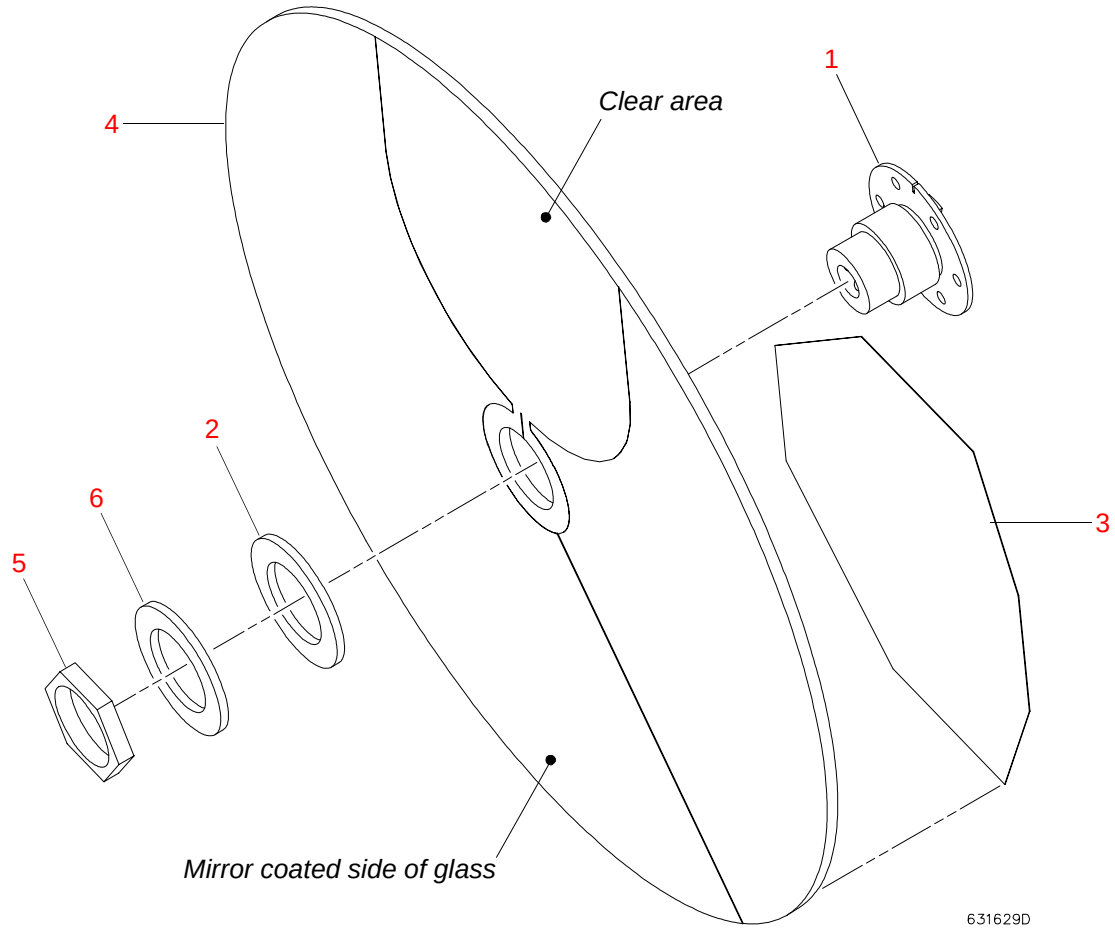


Figure 3-31: Dimmer Wheel Assembly

Wheel Sensor PCB

24.9663.1230 Rev D

Refer to Figure 3-32.

No.	Item	Qty.	UM.	Description
1	11.9663.1230	1	EA	PCB, WHEEL SENSOR
2	52.6507.0003	1	EA	HEADER, 3POS R/A 2MM SHROUDED
3	86.7002.0004	1	EA	SWITCH, SLOTTED OPTICAL OPB610

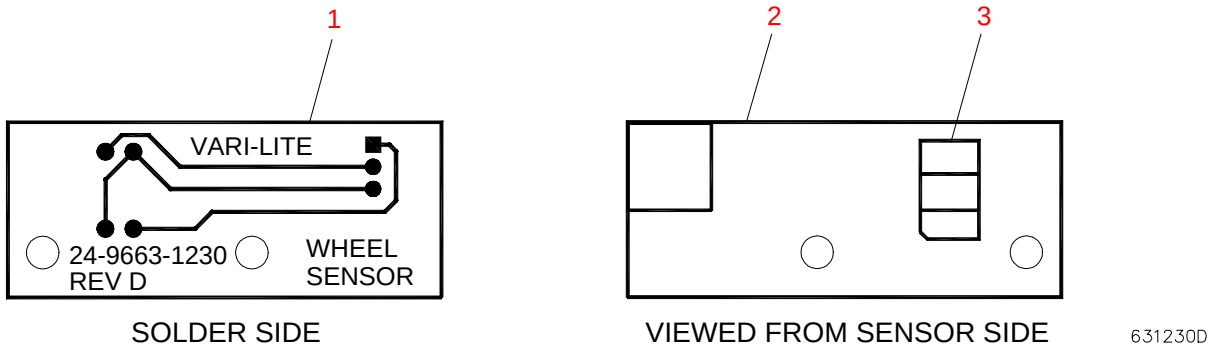


Figure 3-32: Wheel Sensor PCB

Index Sensor PCB

24.9663.1231 Rev B

Refer to Figure 3-33.

No.	Item	Qty.	UM.	Description
1	11.9663.1231	1	EA	PCB, INDEX SENSOR
2	52.6447.0004	1	EA	HEADER, SHROUDED 4 POSITION
3	86.7002.0004	1	EA	SWITCH, SLOTTED OPTICAL OPB610

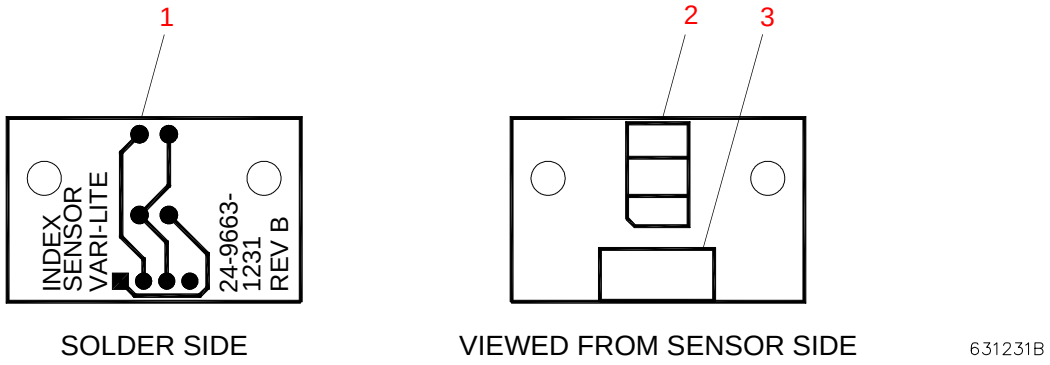


Figure 3-33: Index Sensor PCB

Shutter Assembly

21.9663.1300 Rev Q

Refer to Figure 3-34.

No.	Item	Qty.	UM.	Description
1	10.9660.0129	1	EA	SHAFT STOP, ROTATING GOBO WHEEL
2	10.9663.1310	1	EA	BASE PLATE, SHUTTER
3	10.9663.1311	5	EA	SEPARATOR, SHUTTER
4	10.9663.1312	4	EA	SPACER, SHUTTER
5	10.9663.1313	1	EA	COVER, SHUTTER
6	10.9663.1314	8	EA	RACK, SHUTTER
7	10.9663.1317	1	EA	BULKHEAD, SHUTTER
8	10.9663.1319	1	EA	SHIM, ROTATION
9	10.9663.1320	8	EA	PAD, MOTOR
10	10.9663.1321	1	EA	CLAMP RING, MOTOR
11	10.9663.1325	3	EA	ROLLER, NYLON
12	10.9663.1331	3	EA	STIFF SEPARATOR, SHUTTER
13	10.9663.1332	1	EA	BRASS PINON, SHUTTER
14	10.9663.1333	1	EA	ROLLER, AUX SHUTTER
15	10.9663.1334	1	EA	STOP, SHUTTER ROTATION
16	10.9663.1339.02	1	EA	DONUT, ANTI-REFLECTION, SHUTTER
17	12.9663.1323	2	EA	BLADE, SHUTTER COATED SIDE A
18	12.9663.1324	2	EA	BLADE, SHUTTER COATED SIDE B
19	21.9663.1302	8	EA	ASSY, SHUTTER MOTOR
	- 10.9663.1316	1	EA	PINION, SHUTTER
	- 44.9663.1301	1	EA	MOTOR, 10 .32" SHAFT 2.8MH 5.8 OHM
-	25.9663.2040	1	EA	CABLE ASSY, BEAM SHAPER HARNESS - **NOT SHOWN**
20	44.9663.1326	1	EA	MOTOR, 17 .53" SHAFT 11.8MH 5.5 OHM
21	53.2002.0001	1	EA	NUT, 6-32 KEP ZINC PLATED
22	53.2202.0004	1	EA	NUT, 4-40 HEX SS NYLON INSERT
23	53.2202.0006	1	EA	NUT, 6-32 HEX SS NYLON INSERT
24	53.5638.0252	4	EA	SCREW, 6-32 X 1/4"LG PFS UNDERCUT HEAD
25	53.6525.0001	1	EA	SCREW, 6-32 X 5/16" PPZ
26	53.6536.1000	1	EA	SCREW, 4-40 X 1" PFZ
27	53.6613.0001	1	EA	SCREW, 6-32 X 1/2" PPZ

No.	Item	Qty.	UM.	Description
28	53.6616.0001	7	EA	SCREW, 6-32 X 3/4" PPZ
29	55.2178.0002	1	EA	CABLE ANCHOR MOUNT, #10 SCREW MOUNTING
30	55.3301.0006	3	EA	WASHER, #6 FLAT SS
31	55.3303.0006	4	EA	WASHER, #6 LOCK INT. TOOTH SS
32	55.6655.0006	1	EA	SPACER, 1/4" RND .116" ID THRU 1/4" LG ZINC PLATED BRAS

Shutter Assembly (continued)

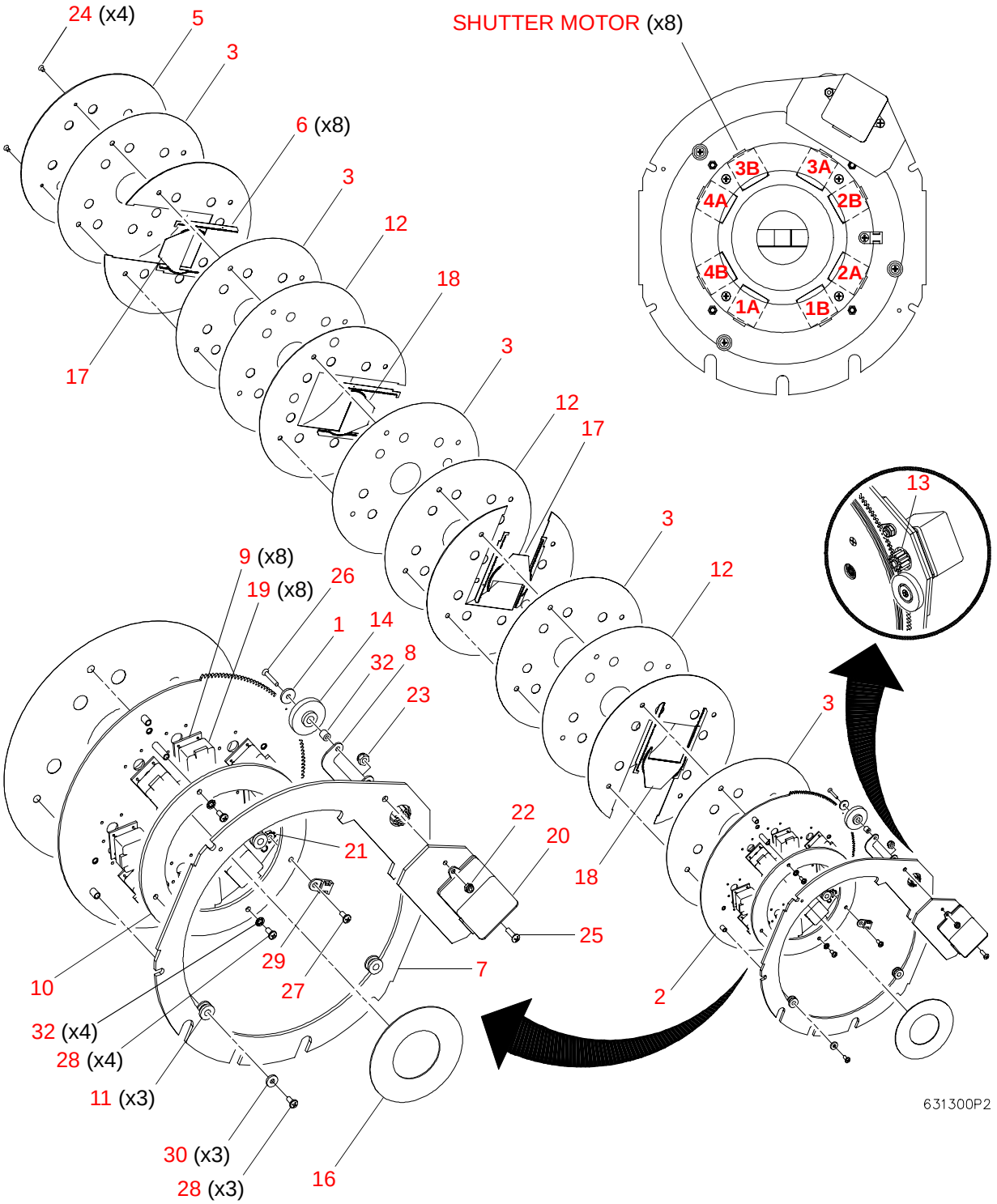


Figure 3-34: Shutter Assembly

Shutter 6 Rollers Assembly

21.9663.1350 Rev 0

Refer to Figure 3-35.

No.	Item	Qty.	UM.	Description
1	10.9663.1311	5	EA	SEPARATOR, SHUTTER
2	10.9663.1312	4	EA	SPACER, SHUTTER
3	10.9663.1313	1	EA	COVER, SHUTTER
4	10.9663.1314	8	EA	RACK, SHUTTER
5	10.9663.1320	8	EA	PAD, MOTOR
6	10.9663.1321	1	EA	CLAMP RING, MOTOR
7	10.9663.1325	6	EA	ROLLER, NYLON
8	10.9663.1327	1	EA	GEAR, SHUTTER ROTATE SECTOR
9	10.9663.1328	1	EA	BULKHEAD, SHUTTER MACHINED
10	10.9663.1329	1	EA	STOP SLEEVE, SILICONE
11	10.9663.1330	1	EA	PINON, SHUTTER
12	10.9663.1331	3	EA	STIFF SEPARATOR, SHUTTER
13	10.9663.1339.02	1	EA	DONUT, ANTI-REFLECTION, SHUTTER
14	10.9663.1351	1	EA	BASE PLATE, SHUTTER 6 ROLLERS
15	12.9663.1323	2	EA	BLADE, SHUTTER COATED SIDE A
16	12.9663.1324	2	EA	BLADE, SHUTTER COATED SIDE B
17	21.9663.1302	8	EA	ASSY, SHUTTER MOTOR
	- 10.9663.1316	1	EA	PINION, SHUTTER
	- 44.9663.1301	1	EA	MOTOR, 10 .32" SHAFT 2.8MH 5.8 OHM
-	25.9663.2040	1	EA	CABLE ASSY, BEAM SHAPER HARNESS - **NOT SHOWN**
18	44.9663.1326	1	EA	MOTOR, 17 .53" SHAFT 11.8MH 5.5 OHM
19	53.2200.0006	1	EA	NUT, 6-32 KEPS SS
20	53.2202.0004	4	EA	NUT, 4-40 HEX SS NYLON INSERT
21	53.2202.0006	2	EA	NUT, 6-32 HEX SS NYLON INSERT
22	53.5638.0252	4	EA	SCREW, 6-32 X 1/4"LG PFS UNDERCUT HEAD
23	53.6525.0001	10	EA	SCREW, 6-32 X 5/16" PPZ
24	53.6526.0001	2	EA	SCREW, 6-32 X 5/8" PPZ
25	53.6536.0001	2	EA	SCREW, 4-40 X 1/2" PFZ
26	53.6613.0001	1	EA	SCREW, 6-32 X 1/2" PPZ
27	55.2178.0002	1	EA	CABLE ANCHOR MOUNT, #10 SCREW MOUNTING

No.	Item	Qty.	UM.	Description
28	55.3301.0006	6	EA	WASHER, #6 FLAT SS
29	55.3303.0006	4	EA	WASHER, #6 LOCK INT. TOOTH SS
30	55.6621.0001	4	EA	WASHER, #4 FLAT ZINC
31	55.6697.0020	2	EA	STANDOFF, 3/16" RND, 4-40, .375"LG, ZINC PLATED STEEL

Shutter Assembly (continued)

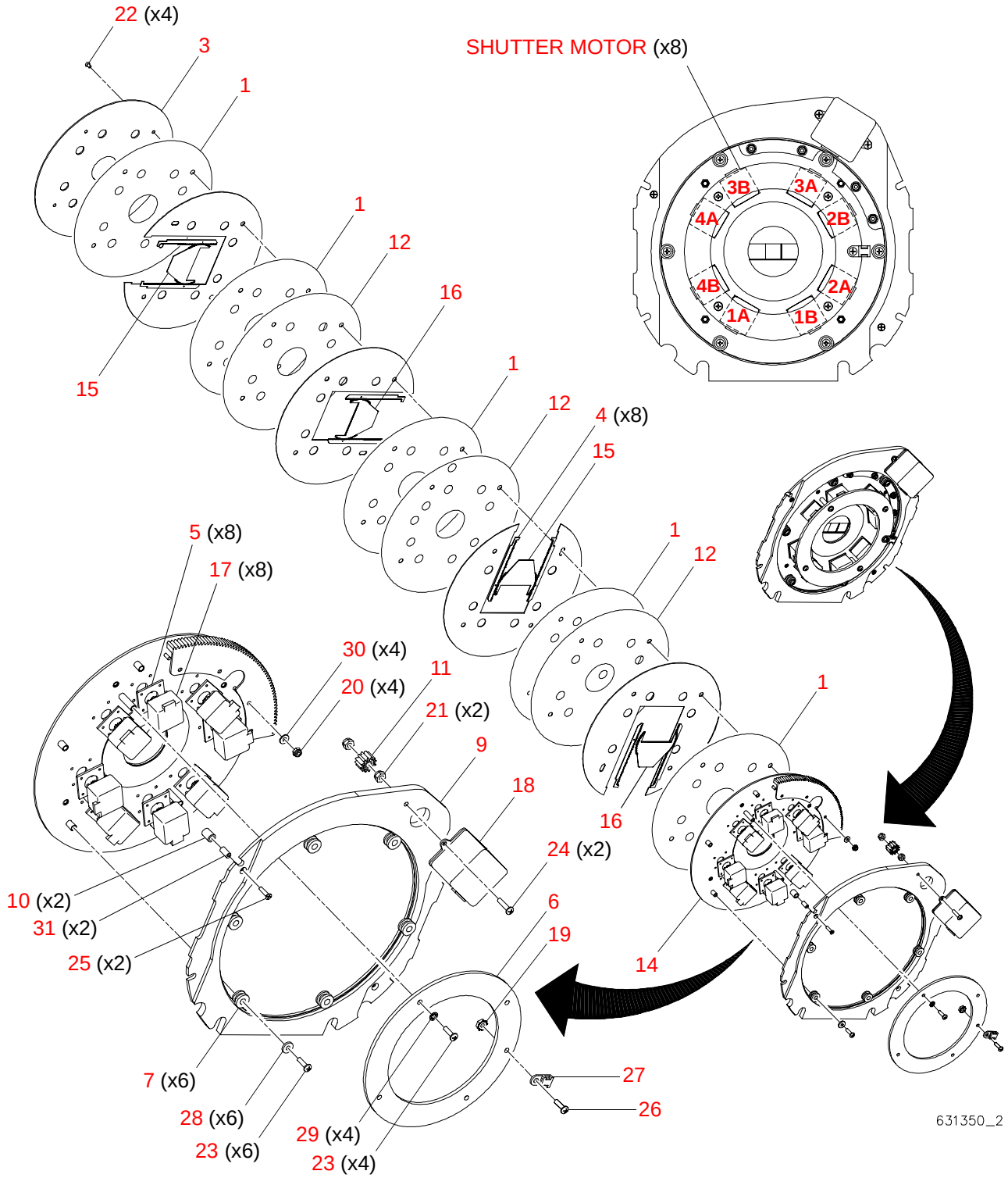


Figure 3-35: Shutter 6 Rollers Assembly

Beam-Size Iris Assembly

21.9663.1400 Rev D

Refer to Figure 3-36.

No.	Item	Qty.	UM.	Description
1	10.9663.1339.03	1	EA	DONUT, ANTI-REFLECTION IRIS
2	10.9663.1411	1	EA	BULKHEAD, IRIS
3	21.9663.1409	1	EA	ASSY, MOTOR ARM
	- 10.9663.1402	1	EA	ARM, MOTOR
	- 10.9663.1406	1	EA	BOSS, MOTOR ARM
	- 53.6659.0008	3	EA	SCREW, 2-56 X 3/16" PFZ
4	22.9663.1410	1	EA	IRIS, 67MM OD
5	44.9663.1326	1	EA	MOTOR, 17 .53" SHAFT 11.8MH 5.5 OHM
6	53.5560.0250	1	EA	SCREW, 8-32 X 1/4" SET CONE POINT
7	53.6513.0042	3	EA	SCREW, M2 X .4 X 4MM LG PFB METRIC
8	53.6543.0003	2	EA	SCREW, 6-32 X 3/16" PPB
9	53.6605.0200	1	EA	STUD, 2-56 X 2.0"LG FULL THREAD STAINLESS STEEL
10	54.1217.0005	2	EA	KWIK LINK, 2-56 SPRING STEEL
11	55.6546.0004	1	EA	WASHER, TEFLON, .201 ID X .438 0D X .040 THK

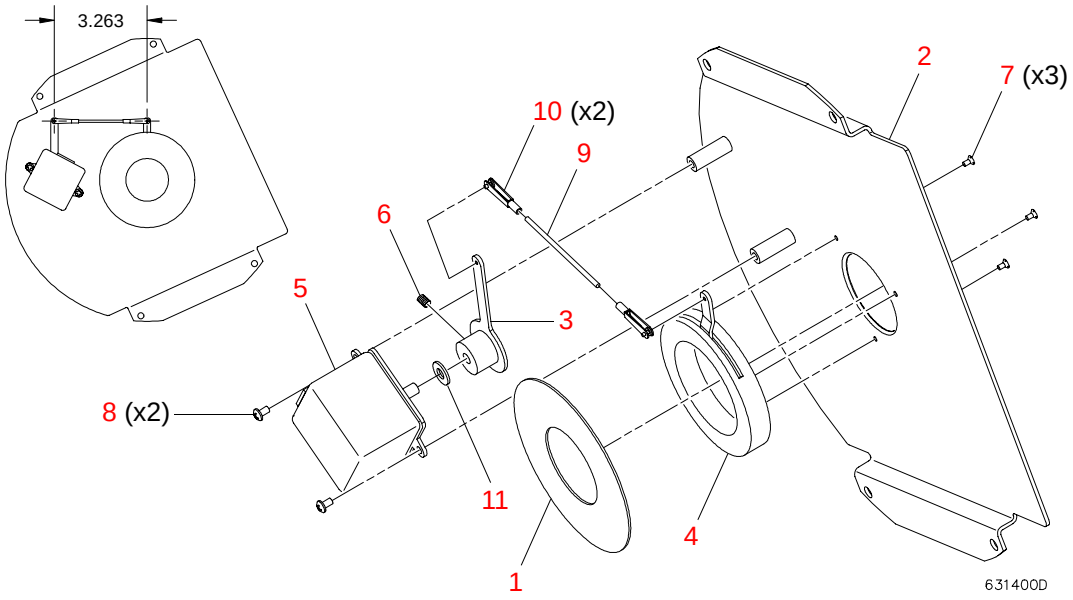


Figure 3-36: Beam-Size Iris Assembly

Rear Head Assembly

21.9663.1002.01 Rev J (T/TS)
21.9663.1002.11 Rev J (A/AS)

Refer to Figure 3-37.

No.	Item	Qty.	UM.	Description
1	10.9634.0100	3	EA	CLIP,MOUNTING,REFLECTOR
2	10.9663.1104	1	EA	REFLECTOR MOUNT
3	10.9663.1109	2	EA	COUNTERWEIGHT
4	12.9663.1023	1	EA	CASTING, REAR MACHINED
5	21.9663.1101.01	1	EA	ASSY, INC BULKHEAD (**T/TS ONLY**)
	21.9663.1101.11	1	EA	ASSY, ARC BULKHEAD (**A/AS ONLY**)
6	21.9663.1127.01	1	EA	ASSY, BACK CAP (**T/TS ONLY**)
	21.9663.1127.11	1	EA	ASSY, BACK CAP (**A/AS ONLY**)
-	25.9663.2033	REF	EA	CABLE ASSY, LAMP POWER INCANDESCENT (**T/TS ONLY**) **NOT SHOWN**
-	25.9663.2036	REF	EA	CABLE ASSY, IGNITOR TO LAMP SOCKET (**A/AS ONLY**) **NOT SHOWN**
7	42.9663.0237	1	EA	REFLECTOR, 48 LUNE (**T/TS ONLY**)
	42.9663.1117	1	EA	REFLECTOR, 8, 10, 14 DEGREE LUNES FACETED (**A/AS ONLY**)
8	53.2002.0001	3	EA	NUT, 6-32 KEP ZINC PLATED
9	53.6522.0005	4	EA	SCREW, 6-32 X 3/8" LG PFZ TYPE F
10	53.6553.0004	4	EA	SCREW, 10-32 X 3/8"LG PPB TYPE F
11	53.6607.0001	3	EA	SCREW, 6-32 X 1/4" PPB
12	53.6625.0001	4	EA	SCREW, 10-32 X 1/2" PPB
13	53.6682.0037	1	EA	SCREW, 10-32 X 1/2" LG PPZ SEMS-EXT
14	55.3301.0010	1	EA	WASHER, #10 FLAT
15	55.6636.0004	1	EA	WASHER, #10 FENDER ZINC PLT SS 1.250"OD .219"ID .047"THK

Rear Head Assembly (continued)

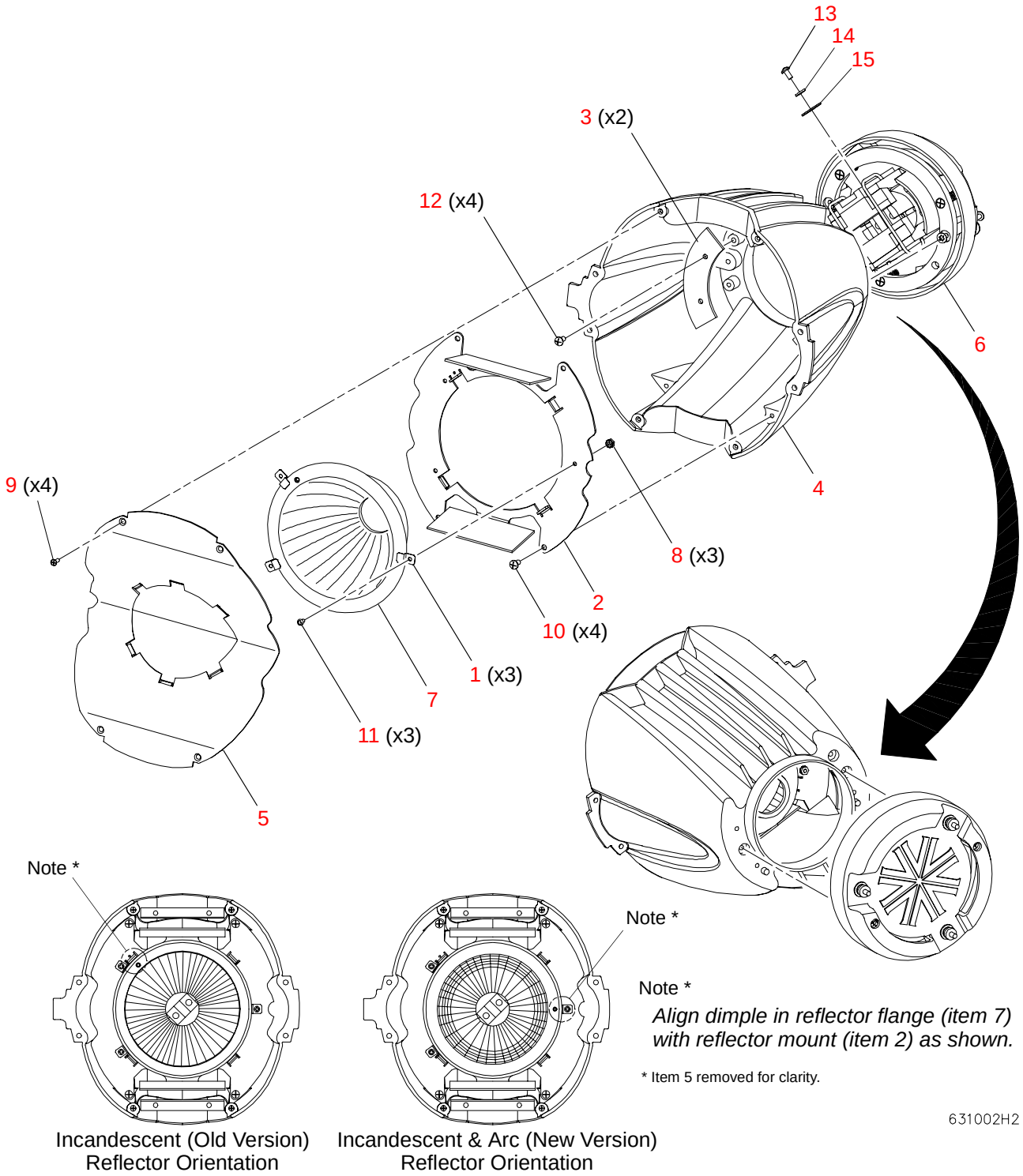


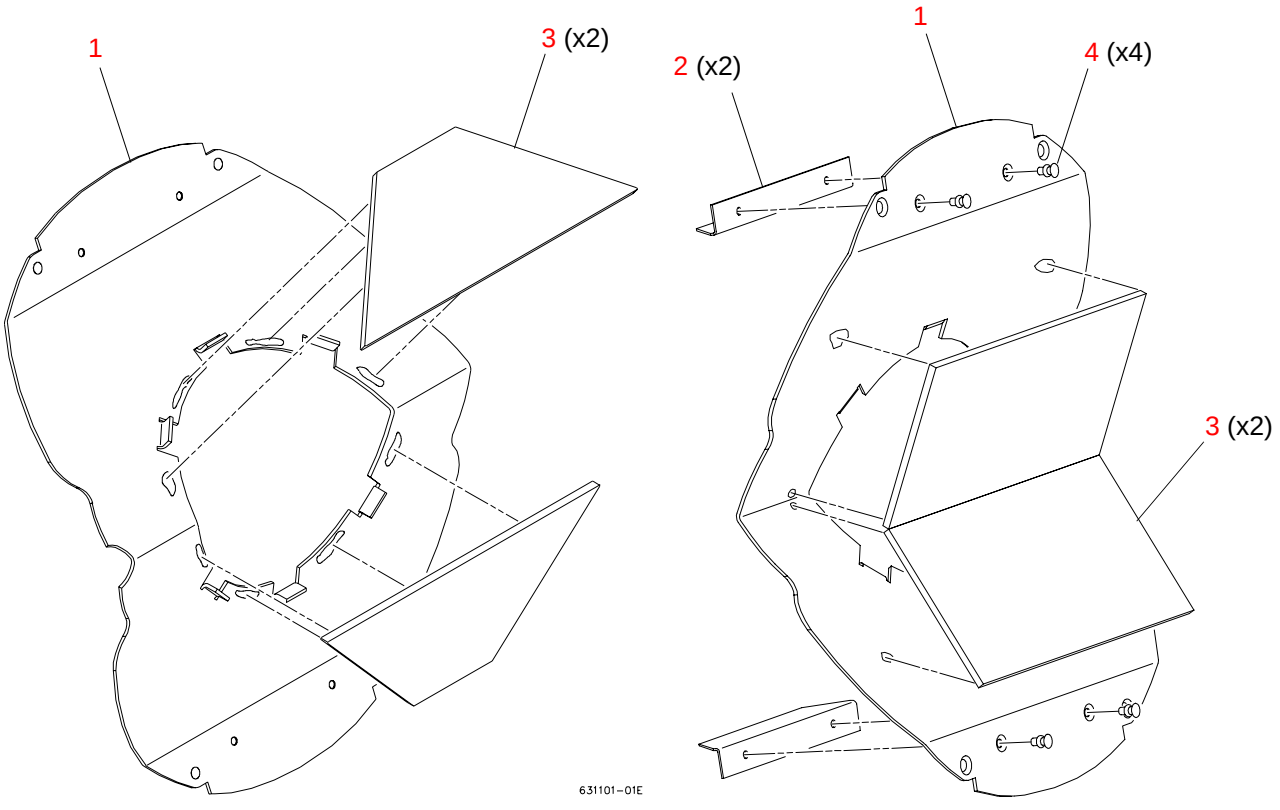
Figure 3-37: Rear Head Assembly

Bulkhead Assembly

21.9663.1101.01 (T/TS) Rev G
21.9663.1101.11 (A/AS) Rev G

Refer to Figure 3-38.

No.	Item	Qty.	UM.	Description
1	10.9663.1103	1	EA	THERMAL BULKHEAD
2	10.9663.1128	2	EA	BAFFLE, EXHAUST LIGHT (**A/AS ONLY**)
3	41.9663,1120	2	EA	AR SOLITE (**T/TS ONLY**) **OLD VERSION**
	41.9663.1133	2	EA	UV/IR FILTER (**T/TS & A/AS**) **NEW VERSION**
4	53.6540.0005	4	EA	RIVET, 1/8"OD .063"-.125"GL, CSK HD CLOSED END AL (**A/AS ONLY**)



(T/TS ONLY-OLD VERSION) **(T/TS & A/AS-NEW VERSION)**

Figure 3-38: Bulkhead Assembly

Back Cap Assembly

21.9663.1127.01 (T/TS) Rev D
21.9663.1127.11 (A/AS) Rev D

Refer to Figure 3-39.

No.	Item	Qty.	UM.	Description
1	10.9663.1116	2	EA	CLAMP, LAMP BASE BAIL (**T/TS ONLY**)
2	10.9663.1118	1	EA	PLATE, BACKCAP ADJUST
3	10.9663.1119	2	EA	LAMP BASE CLAMP (**T/TS ONLY**)
4	12.9663.1126	1	EA	BACKCAP, MACHINED
5	53.2008.0003	2	EA	NUT, PUSH #10
6	53.2022.0003	3	EA	NUT, 10-32 THUMB 1/2"OD RND KNURLED BRASS
7	53.5510.2375	2	EA	SCREW, 10-32 X 2 3/8" LG PPSS BLACK
8	53.6539.0011	3	EA	SCREW, 10-32 X 2 1/4" PFBSS UNF-2A
9	53.6575.0001	2	EA	SCREW, 8-32 X 1.0" PPZ
10	53.6575.0005	2	EA	SCREW, 8-32 X 1 1/2" PPZ (**T/TS ONLY**)
11	55.6568.0059	3	EA	SPRING, CPRSN, .360" OD 1.50" LG .045" DIA SS
12	55.6623.0004	3	EA	WASHER, #10 FLAT SS .203 ID .625 OD .050 THK
13	55.6704.0013	1	EA	STANDOFF, 1/4" HEX 8-32 .500" LG (**T/TS ONLY**)
14	71.2560.0001	1	EA	SOCKET, LAMP G22 SCREW TERMINALS

Back Cap Assembly (continued)

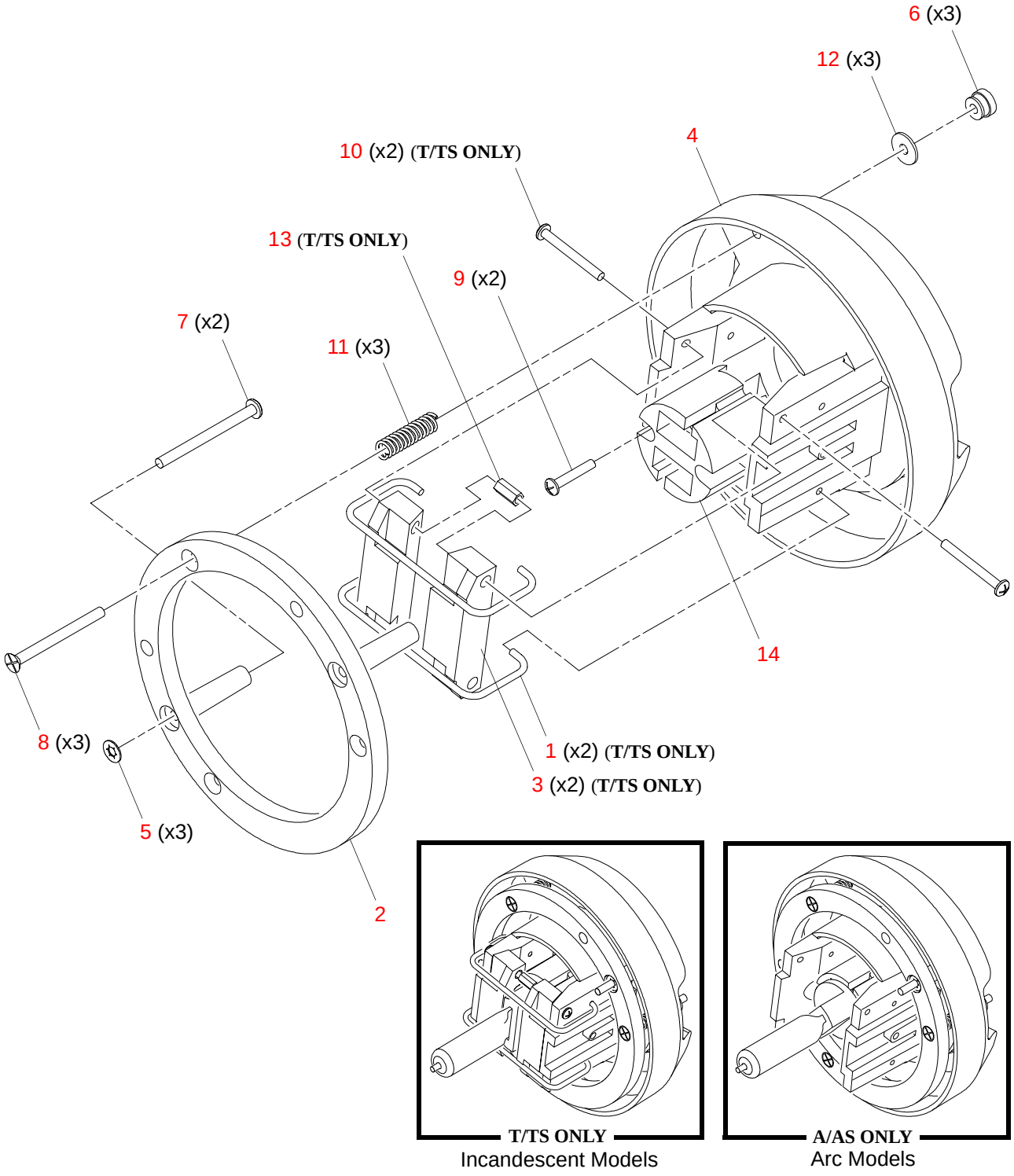


Figure 3-39: Back Cap Assembly

Notes

Yoke Assembly

Yoke Legs Assembly

21.9663.1850.01 (T/TS) Rev C
21.9663.1850.11 (A/AS) Rev C

Refer to Figure 3-40.

No.	Item	Qty.	UM.	Description
1	10.9661.1364	1	EA	INSULATOR, ADHESIVE BACKED - TOP COVER
2	10.9663.1827	2	EA	NUT PLATE, PAN/TILT MOTOR
3	10.9663.1842	2	EA	HEATSHIELD, YOKE LEG
4	21.9663.1816	1	EA	ASSY, TILT MOTOR
5	22.9663.1801	1	EA	ASSY, YOKE
6	24.9661.1125	1	EA	PCB ASSY, IGNITOR (**A/AS ONLY**)
7	24.9663.1230	1	EA	PCB ASSY, WHEEL SENSOR
-	25.9663.2017	1	EA	CABLE ASSY, LVS CHASSIS GROUND - **NOT SHOWN** (**T/TS ONLY**)
-	25.9663.2002	1	EA	CABLE ASSY, TILT COT - **NOT SHOWN**
-	25.9663.2020	1	EA	CABLE ASSY, PAN/TILT CONTROL - **NOT SHOWN**
-	25.9663.2024	1	EA	CABLE ASSY, LVS DC OUTPUT - **NOT SHOWN**
8	53.2019.0004	2	EA	NUT, 3/8-16 X 7/32"THK HEX JAM GRD5 ZINC PLT
9	53.6539.0001	2	EA	WASHER, 3/8" SPLIT LOCK
10	53.6543.0001	14	EA	SCREW, 6-32 X 3/8" PPB (**A/AS ONLY)**
		10	EA	SCREW, 6-32 X 3/8" PPB (**T/TS ONLY**)
11	53.6567.0001	3	EA	SCREW, 4-40 X 1/2" PPZ
12	53.6617.0001	4	EA	SCREW, 6-32 X 1" PPB
13	53.6634.0003	2	EA	SCREW, 3/8-16 X 1/2"LG SOC HD CAP ALLY STL
14	55.2140.0001	4	EA	STANDOFF, 1/4" HEX 6-32 .813"LG (**A/AS ONLY**)
15	55.2143.0002	7	EA	STANDOFF, 1/4"HEX 6-32 1.375"LG FF ALUM
16	55.2203.0001	2	EA	SCREW, 4-40 X 1/4 " PPZ
17	55.2204.0001	3	EA	WASHER, #4 NYLON
18	55.3301.0006	4	EA	WASHER, #6 FLAT SS
19	55.6525.0005	3	EA	WASHER, #4 SHOULDER NYLON .125 DP
20	55.6568.0056	1	EA	SPRING, CPRSN .600"OD .625"LG .080"WIRE DIA MUSIC WIRE
21	55.6597.0003	4	EA	CLIP, CABLE SELF RETAINING 1/8"THK PANEL
22	69.3128.0150	1	EA	POWER SUPPLY, 150W +24V/6.3A

Yoke Legs Assembly (continued)

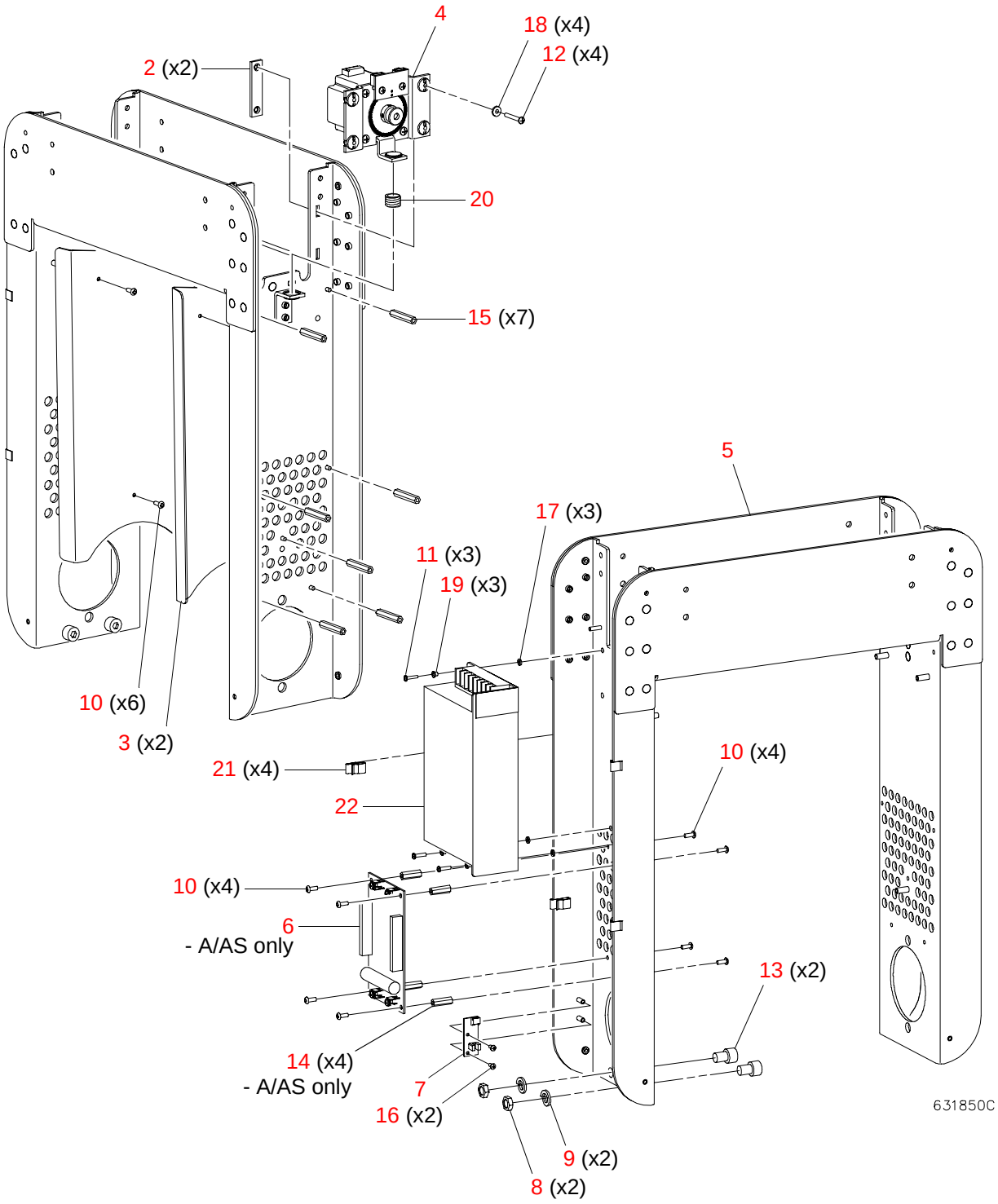


Figure 3-40: Yoke Legs Assembly

Tilt Motor Assembly

21.9663.1816 Rev B

Refer to Figure 3-41.

No.	Item	Qty.	UM.	Description
1	10.9663.1825	1	EA	MOUNT, MOTOR TILT
2	21.9663.1818	1	EA	ASSY, DRIVE PULLEY
	- 10.9663.1818	1	EA	PULLEY, DRIVING - PAN/TILT
	- 10.9663.1820	1	EA	CODEWHEEL, 120 COUNT
3	24.9661.0629	1	EA	PCB ASSY, PAN/TILT ENCODER
4	44.9663.1850	1	EA	MOTOR, 23 .81" SHAFT 12MH 6 OHM
5	53.2200.0008	4	EA	NUT, 8-32 KEPS SS
6	53.6521.0001	4	EA	SCREW, 8-32 X 1/2" PPB
7	55.2203.0001	2	EA	SCREW, 4-40 X 1/4 PPZ
8	55.6579.0015	4	EA	GROMMET, 3/8"HOLE .226"ID .125"THK VERSA-DAMP
9	55.6655.0005	4	EA	SPACER, 1/4"RND .359"LG .141"THRU ALUM

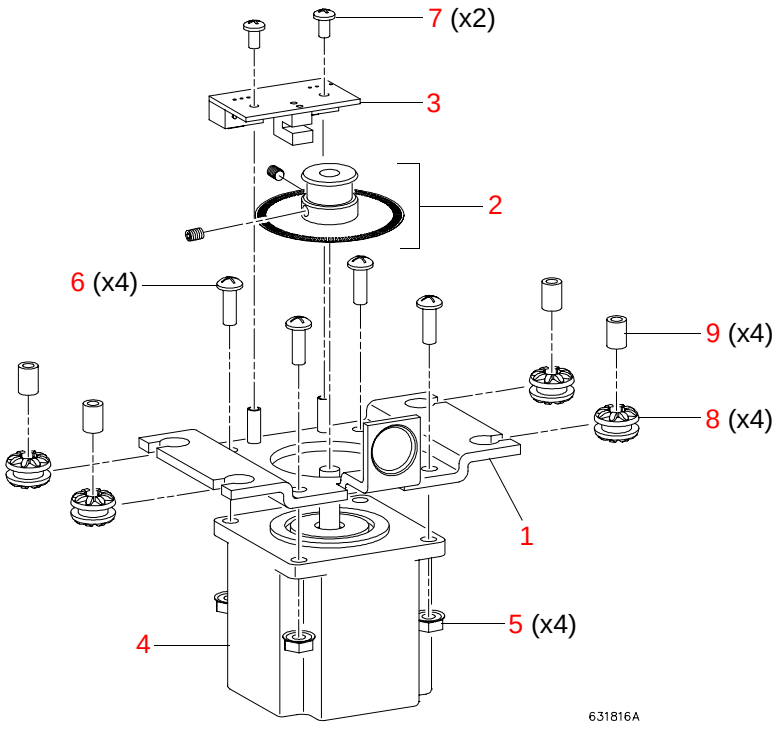


Figure 3-41: Tilt Motor Assembly

Ignitor PCB

24.9661.1125 Rev D

Refer to Figure 3-42.

No.	Item	Qty.	UM.	Description	Ref
1	11.9661.1125	1	EA	PCB, IGNITOR	-
2	51.5006.0003	1	EA	INSULATOR, TO-220, 53.77-AC	UNDER SG1
3	52.8218.0002	4	EA	TERM, PC VERT MNT 6-32 SCREW 15A	J1-J4
4	53.6522.0001	4	EA	SCREW, 6-32 X 1/4" PPZ	ON J1-J4
5	55.6538.0001	4	EA	WASHER, #6 LOCK INTERNAL TOOTH	ON J1-J4
6	60.1422.1002	12	EA	RES, 1/4W 5% 10.0 MEG CF	R1-R12
7	62.2032.0001	1	EA	CAP, .01UF, 3000V, RAD, CERAMIC, .375", 20%	C14
8	62.3000.0033	13	EA	CAP, .033UF 1000V RAD POLYPRO .600" 10%	C1-C13
9	62.3002.0102	1	EA	CAP, .001UF, 15KV, RAD, CERAMIC DISC	C15
10	68.4515.0003	1	EA	INDUCTOR, HIGH VOLT, IGNITOR	L1
11	75.7102.0001	1	EA	SPARK GAP, 2.5KV	SG1
12	82.4311.0818	12	EA	DIODE, MR818 RECTIFIER 1KV 1A	D1-D12
13	82.5310.7250	2	EA	DIODE, 1.5KE250CA Z CLIPPER 250V 5W	Z1 & Z2

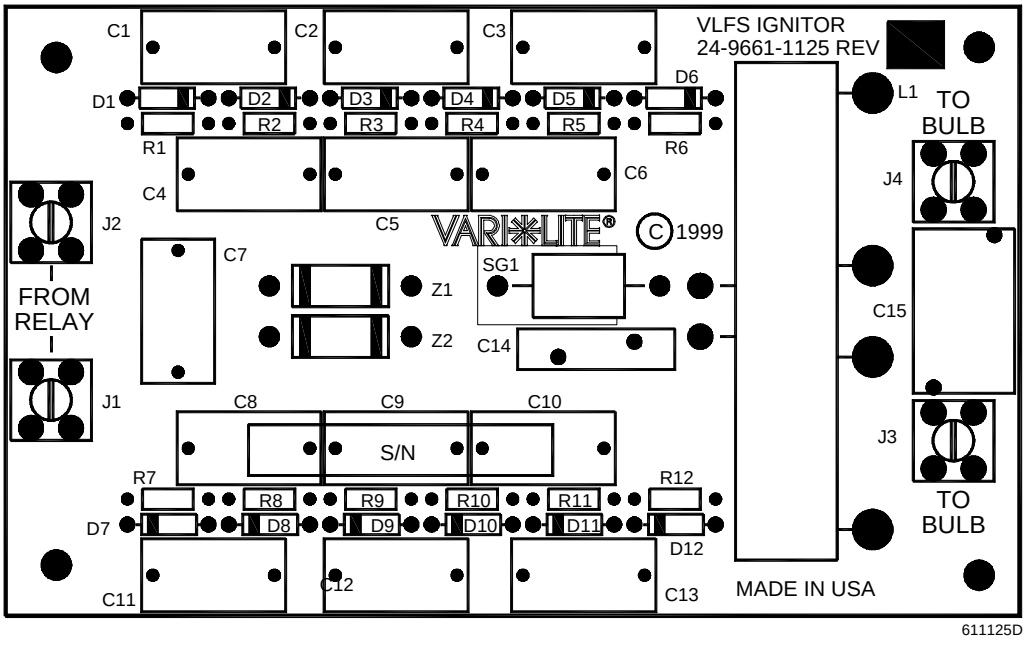


Figure 3-42: Ignitor PCB

Pan/Tilt Encoder PCB Assembly

24.9661.0629 Rev 0

Refer to Figure 3-43.

No.	Item	Qty.	UM.	Description	Ref
1	11.9661.0629	1	EA	PCB, ENCODER SENSOR	-
2	52.6613.0005	1	EA	HEADER, 5POS SGL ROW SHROUDED LATCHING	J1
3	52.6613.0006	1	EA	HEADER, 6POS SGL ROW SHROUDED LATCHING	J2
4	60.9460.1802	2	EA	RES, .1W 5% 180.0 OHM 100V CHIP SUR MT	R1, R2
5	62.3009.0103	1	EA	CAP, .01UF 50V 10% MONO CER CHIP SUR MT	C1
6	86.7009.0001	1	EA	IC, GP1A70R OPIC PHOTOINTERRUPTER	S1

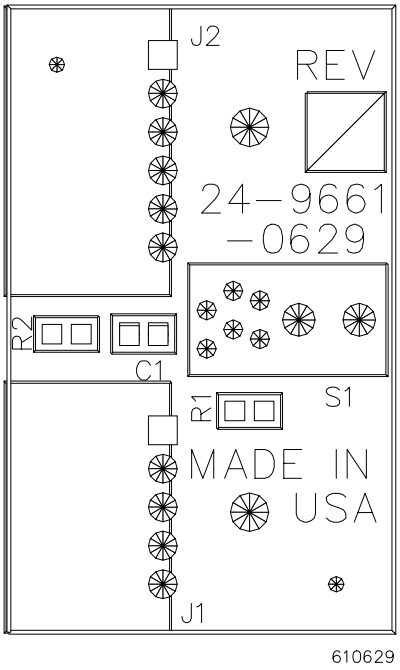


Figure 3-43: Pan/Tilt Encoder PCB Assembly

Crossmember Assembly

21.9663.1811.01 (T/TS) Rev D
21.9663.1811.11 (A/AS) Rev D

Refer to Figure 3-44.

No.	Item	Qty.	UM.	Description
1	10.9663.1808	1	EA	TOGGLE, PAN
2	10.9663.1809	1	EA	ACTUATOR, TOGGLE PAN
3	10.9663.1814	1	EA	PULLEY, PAN
4	10.9663.1821	1	EA	COVER, PAN TUBE
5	10.9663.1827	2	EA	NUT PLATE, PAN/TILT MOTOR
6	10.9663.1844	1	EA	SHIELD, WIRE PAN
7	10.9663.1846	1	EA	TETHER, PAN TUBE SAFETY
8	21.9663.1812	1	EA	ASSY, INNER CROSSMEMBER
9	21.9663.1813	1	EA	ASSY, OUTER CROSSMEMBER
10	21.9663.1815	1	EA	ASSY, PAN MOTOR
11	21.9663.1819.01	1	EA	ASSY, PAN TUBE (**T/TS ONLY**)
	21.9663.1819.11	1	EA	ASSY, PAN TUBE (**A/ASONLY**)
12	24.9663.1230	1	EA	PCB ASSY, WHEEL SENSOR
-	25.9663.2001	1	EA	CABLE ASSY, PAN EOT - **NOT SHOWN**
13	53.2020.0001	1	EA	NUT, 1/4-20 HEX STL ZINC PLTD
14	53.5509.1375	1	EA	SCREW, 8-32 X 3/8" PPZ TYPE F
15	53.6505.0009	1	EA	BOLT, 1/4-20 X 2 1/2" HX HD CAP ZINC
16	53.6552.0001	6	EA	SCREW, 8-32 X 1/2" PFZ
17	53.6556.0006	4	EA	SCREW, 4-40 X 3/8" LG PPZ TYPE F
18	53.6575.0020	14	EA	SCREW, 8-32 X 3/8" LG PFZ TYP-F THRD CUTNG
19	53.6617.0001	4	EA	SCREW, 6-32 X 1"
20	54.1206.0014	3	EA	RING, RETAINING 1.375" SHAFT 1.291" GRV DIA .056" GRVWD EXTERNAL
21	54.2047.0024	1	EA	BELT, TIMING GT 3MM PITCH 150GRV 6MM WD NEOPRENE
22	55.2203.0001	2	EA	SCREW, 4-40 X 1/4 " PPZ
23	55.3301.0006	4	EA	WASHER, #6 FLAT SS
24	55.6563.0001	3	EA	SCREW, 10-32 X 1/4" PPZ
25	55.6568.0055	1	EA	SPRING, CPRSN .240"OD .813"LG .038" WIRE DIA MUSIC WIRE

Crossmember Assembly (continued)

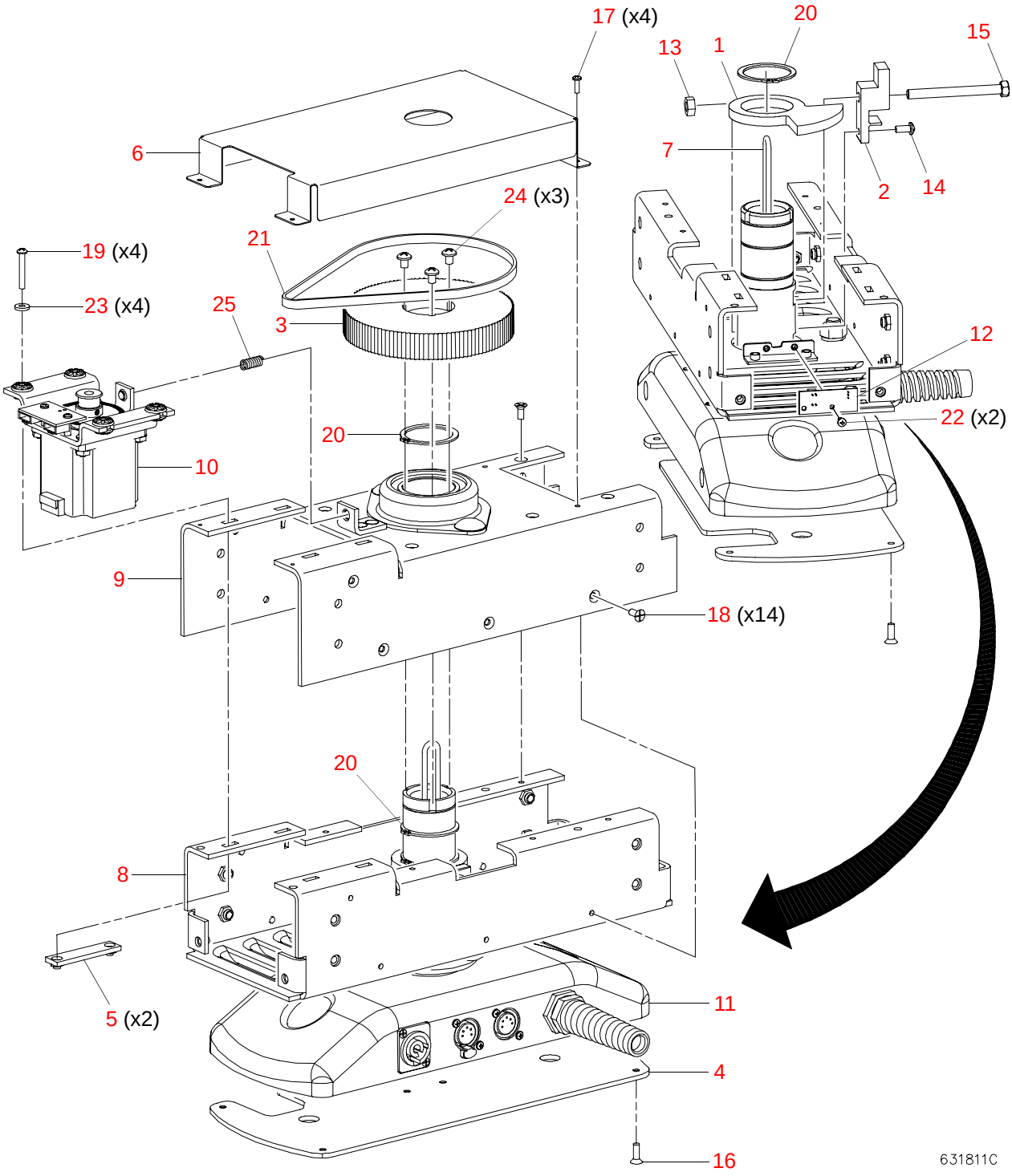


Figure 3-44: Crossmember Assembly

Inner Crossmember Assembly

21.9663.1812 Rev B

Refer to Figure 3-45.

No.	Item	Qty.	UM.	Description
1	10.9663.1805	1	EA	CROSSMEMBER, INNER
2	53.2019.0001	2	EA	NUT, 3/8-16 HEX
3	53.6505.0022	2	EA	BOLT, 3/8-16 X 3/4"LG CARRIAGE GRD5 ZINC PLT
4	53.6539.0001	2	EA	WASHER, 3/8" SPLIT LOCK
5	54.1255.0002	1	EA	BEARING ASSY, FLUSH MOUNT HOUSING LARGE

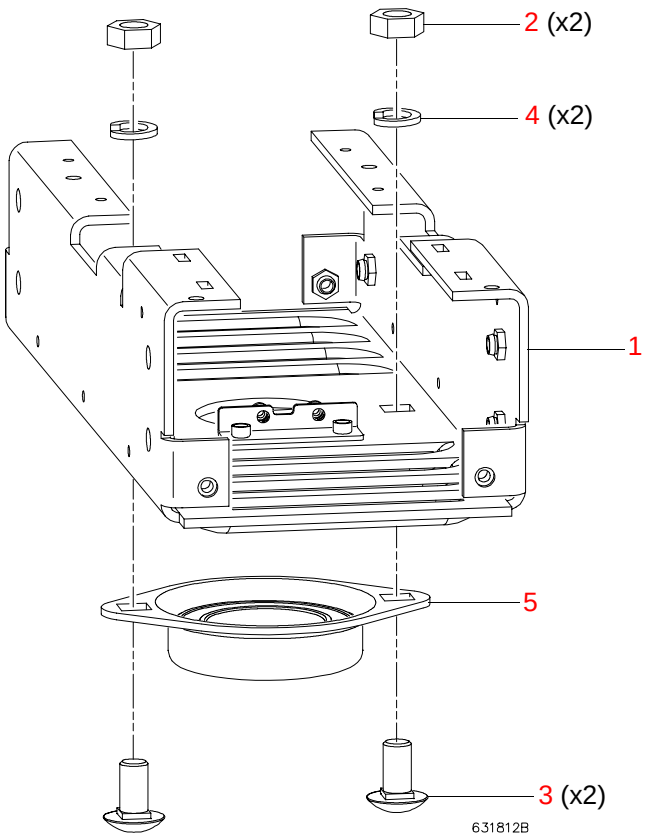


Figure 3-45: Crossmember Inner Assembly

Outer Crossmember Assembly

21.9663.1813 Rev A

Refer to Figure 3-46.

No.	Item	Qty.	UM.	Description
1	10.9663.1898	1	EA	SPACER, PAN BEARING
2	21.9663.1843	1	EA	ASSY, CROSSMEMBER OUTER
3	53.2019.0001	2	EA	NUT, 3/8-16 HEX
4	53.6505.0022	1	EA	BOLT, 3/8-16 X 3/4"LG CARRIAGE GRD5 ZINC PLT
5	53.6505.0023	1	EA	BOLT, 3/8-16 X 1 1/4"LG CARRIAGE GRD5 ZINC PLT
6	53.6539.0001	2	EA	WASHER, 3/8" SPLIT LOCK
7	54.1255.0001	1	EA	BEARING ASSY, BLACK FLUSH MOUNT HOUSING

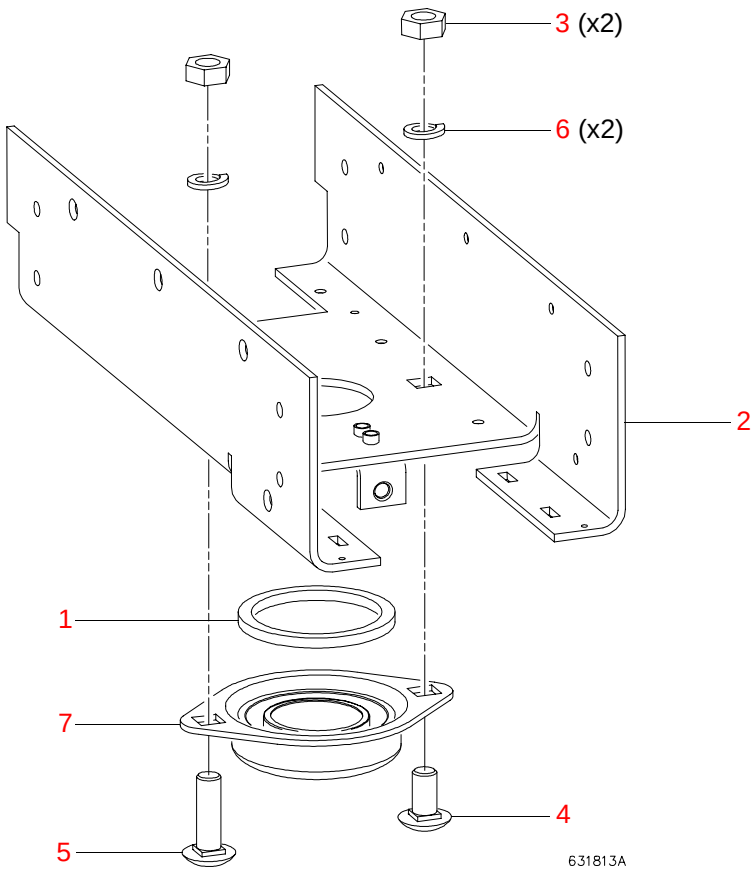


Figure 3-46: Crossmember Outer Assembly

Pan Motor Assembly

21.9663.1815 Rev B

Refer to Figure 3-47.

No.	Item	Qty.	UM.	Description
1	10.9663.1817	1	EA	MOUNT, MOTOR PAN
2	21.9663.1818	1	EA	ASSY, DRIVE PULLEY
	- 10.9663.1810	1	EA	PULLEY, DRIVING - PAN/TILT
	- 10.9663.1820	1	EA	CODEWHEEL, 120 COUNT
3	24.9661.0629	1	EA	PCB ASSY, PAN/TILT ENCODER
4	44.9663.1850	1	EA	MOTOR, 23 .81" SHAFT 12MH 6 OHM
5	53.2200.0008	4	EA	NUT, 8-32 KEPS SS
6	53.6521.0001	4	EA	SCREW, 8-32 X1/2, PPB
7	55.2203.0001	2	EA	SCREW, 4-40 X 1/4 PPZ
8	55.6579.0015	4	EA	GROMMET, 3/8"HOLE .226"ID .125"THK VERSA-DAMP
9	55.6655.0005	4	EA	SPACER, 1/4"RND .359"LG .141"THRU ALUM

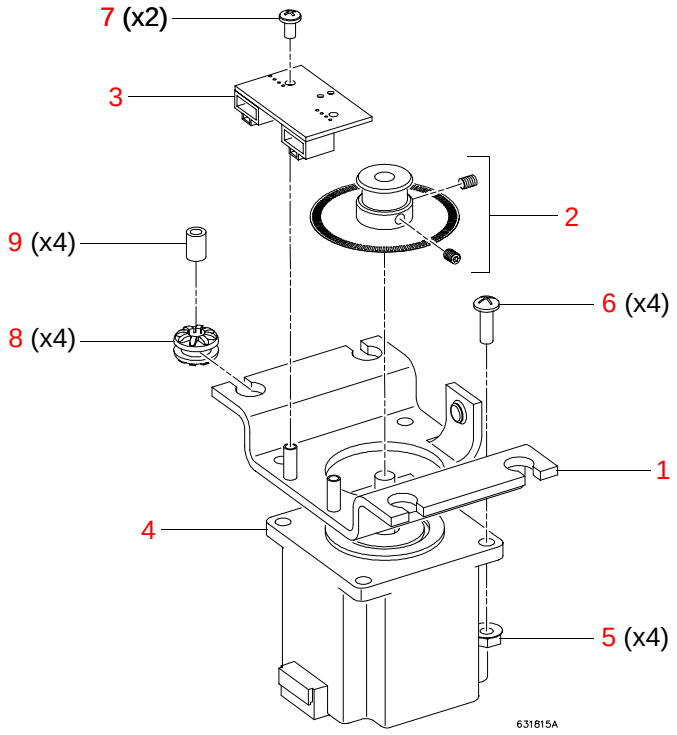


Figure 3-47: Pan/Tilt Motor Assembly

Pan Tube Assembly

21.9663.1819.01 (T/TS) Rev G
21.9663.1819.11 (A/AS) Rev G

Refer to Figure 3-48.

No.	Item	Qty.	UM.	Description
1	04.9640.0374	1	EA	LABEL, P.E. GROUND
2	10.9663.1851	1	EA	PAN TUBE, TOP
3	24.9663.1830	1	EA	PCB ASSY, DMX INPUT
4	25.9663.1921	1	EA	CABLE ASSY, ARC POWER INPUT (PIGTAIL) (**A/AS ONLY**)
5	25.9663.2015	1	EA	CABLE ASSY, AC LINE INPUT
-	25.9663.2016.01	1	EA	CABLE ASSY, INCANDESCENT LVS AC INPUT (**T/TS ONLY**) **NOT SHOWN**
	25.9663.2016.11	1	EA	CABLE ASSY, ARC LVS AC INPUT (**A/AS ONLY**) - **NOT SHOWN**
-	25.9663.2021	1	EA	CABLE ASSY, BALLAST CONTROL LINK (**A/AS ONLY**) **NOT SHOWN**
-	25.9663.2022	1	EA	CABLE ASSY, DATA I/O LINK - **NOT SHOWN**
6	25.9663.2030	1	EA	CABLE ASSY, INCANDESCENT POWER INPUT (PIGTAIL) (**T/TS ONLY**)
-	25.9663.2033	1	EA	CABLE ASSY, LAMP POWER INCANDESCENT (**T/TS ONLY**) **NOT SHOWN**
-	25.9663.2035	1	EA	CABLE ASSY, ARC POWER TO IGNITOR (**A/AS ONLY**) **NOT SHOWN**
7	52.8295.0002	2	EA	TERMINAL STRIP, 300V 12AWG 20A 2 POS. (**A/AS ONLY**)
	52.8295.0002	1	EA	TERMINAL STRIP, 300V 12AWG 20A 2 POS. (**T/TS ONLY**)
8	52.8295.1002	1	EA	SPACER, TERMINAL STRIP, 600V, 2 POS (CUT 12 POS)
9	53.2200.0004	2	EA	NUT, 4-40 KEPS SS
10	53.2200.0006	4	EA	NUT, 6-32 KEPS SS
11	53.6526.0002	1	EA	SCREW, 6-32 X 5/8" PPZ TYPE F
12	53.6536.0001	2	EA	SCREW, 4-40 X 1/2" PFZ
13	53.6556.0006	4	EA	SCREW, 4-40 X 3/8"LG PPZ TYPE F
14	53.6614.0003	2	EA	SCREW, 6-32 X 5/8" PFZ
15	67.4018.0043	1	EA	FERRITE CORE, ROUND CABLE EMI SUPPRESSION 25.9MMX28.6MM (**A/AS ONLY**)
16	68.4536.0003	1	EA	CHOKE, COMON MODE FILTER 1.35 MH 11A W/LEADS (**A/AS ONLY**)

Pan Tube Assembly (continued)

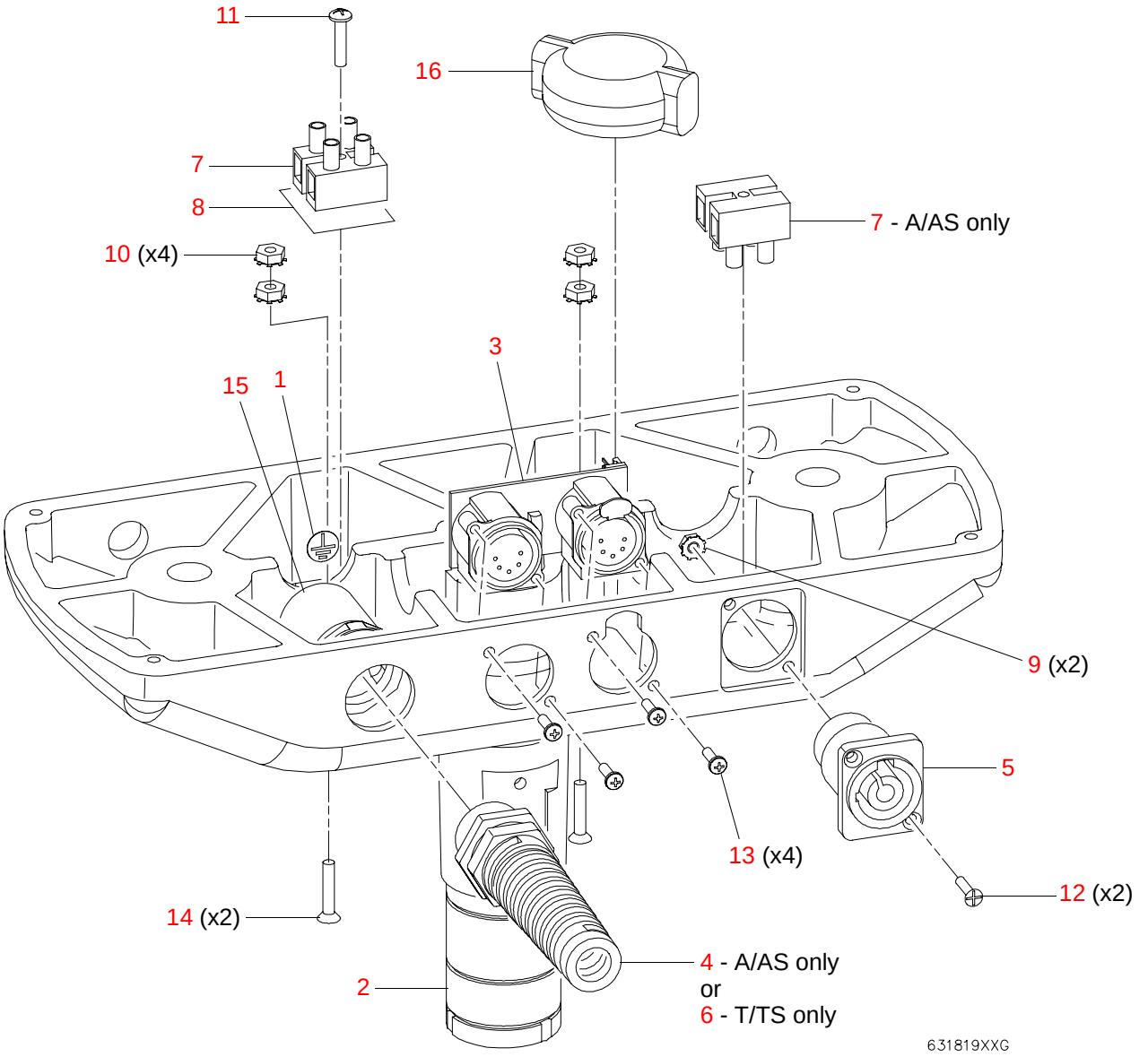


Figure 3-48: Pan Tube Assembly

DMX Input PCB Assembly

24.9663.1830 Rev A

Refer to Figure 3-49.

No.	Item	Qty.	UM.	Description	Ref
1	11.9663.1830	1	EA	PCB FAB, DMX INPUT	-
2	52.6259.0001	1	EA	HEADER, 5POS MTA FRCT LOK STRT POST	J3
3	52.6625.0005	1	EA	CONN, RECEPT XLR 5PIN FEMALE PC MT VERTICAL	J1
4	52.6626.0005	1	EA	CONN, RECEPT XLR 5PIN MALE PC MT VERTICAL	J2
5	62.3017.0102	1	EA	CAP, 1000PF 250V RAD CER DISC 20% Y-TYPE	C1

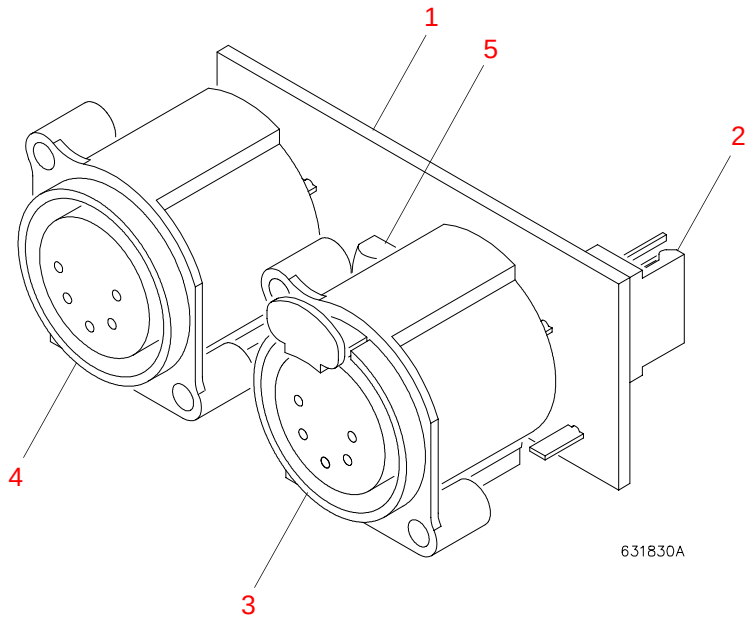


Figure 3-49: DMX Input PCB Assembly

Notes

Cables

Arc Power Input (Pigtail) Cable Assembly

25.9663.1921 Rev D

Refer to Figure 3-50.

No.	Item	Qty.	UM.	Description
1	52.6274.2316	1	EA	STRAIN RELIEF, SKINTOP FLEX TYPE PG16 BLK
2	52.6400.0110	1	EA	PLUG, 17-9 STD SEX CPC 600V KEY A
3	52.6431.0003	1	EA	BACKSHELL, CPC17 NYLON .500-.650 CBL RNG
4	52.6523.0004	1	EA	CONN, HOUSING 4POS PLUG SHROUDED WIRE TO WIRE
5	52.8201.0007	4	EA	SOCKET, GOLD 24-20AWG TYPE3+ REEL .040-.080 INS DIA
6	52.8205.0001	3	EA	SOCKET, GOLD 18-16AWG TYPE 3+ REEL .080-.100 INS DIA
7	52.8231.0005	1	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
8	52.8298.1146	2	EA	FERRULE, WIRE 1X14 AWG L2=8MM BLUE
9	52.8298.1160	2	EA	FERRULE, WIRE 1X16 AWG L2=8MM BLACK
10	52.8344.0008	2	EA	SOCKET, CPC POWER 14AWG 23A LOOSE
11	52.8366.0001	4	EA	CONTACT, 22-24AWG MALE CRIMP
12	55.2199.0002	0.33	FT	HEATSHRINK, 1/16" CLEAR
13	73.7087.0009	4	FT	CABLE, COMPOSITE VL1000 ARC POWER INPUT

Arc Power Input Cable Assembly (continued)

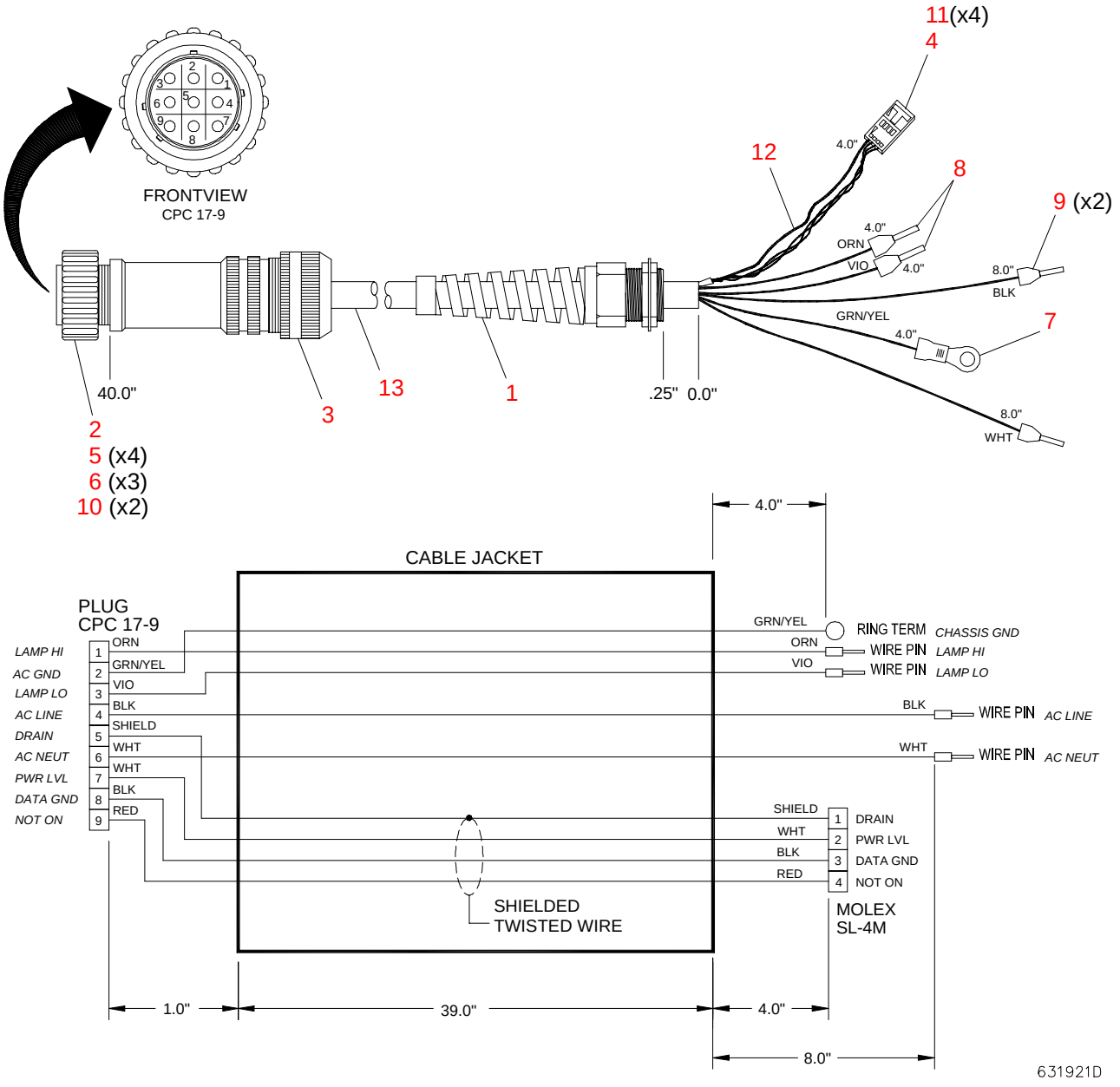


Figure 3-50: Arc Power Input (Pigtail) Cable Assembly

Pan EOT Cable Assembly

25.9663.2001 Rev 0

Refer to Figure 3-51.

No.	Item	Qty.	UM.	Description
1	52.6467.0003	1	EA	CONN, FEM PLUG 3 POS 30-24 AWG CRIMP PHR
2	52.6467.0024	3	EA	CONTACT, SOCKET 30-24AWG CRIMP (REEL) PH (JST)
3	52.6524.0006	1	EA	CONN, HOUSING 6POS RECEPTACLE
4	52.8346.0001	3	EA	CONTACT, 24-30AWG FEMALE CRIMP
5	73.5126.0029	1.08	FT	WIRE, 26AWG 3COND 300V 80C <BLK-RED-WHT> UL1061, 19 STRND

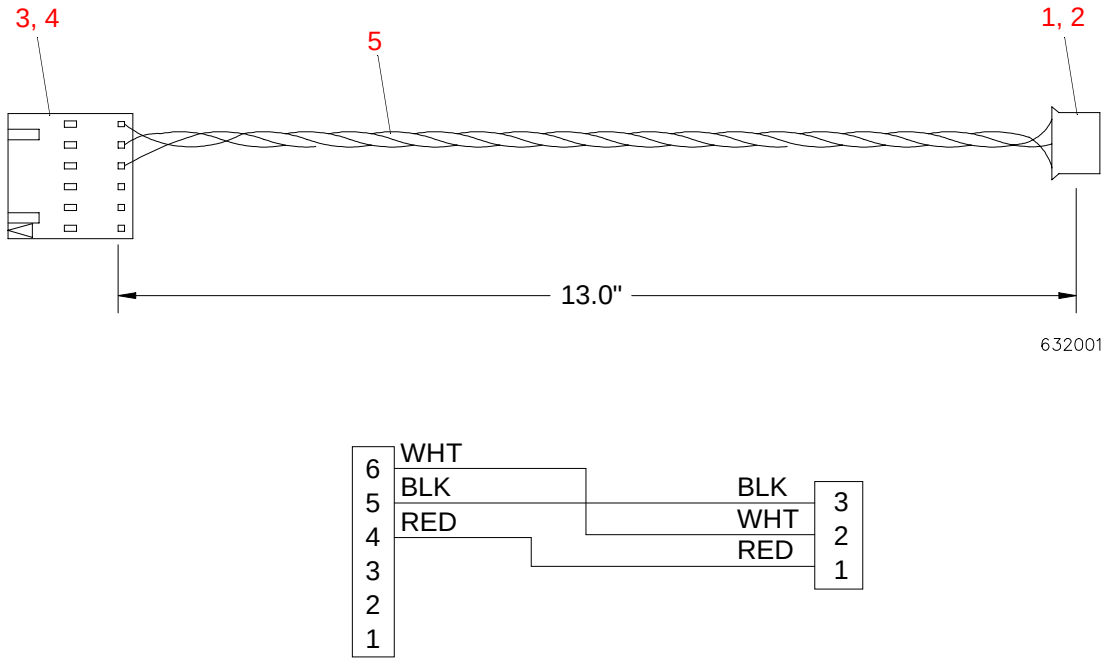


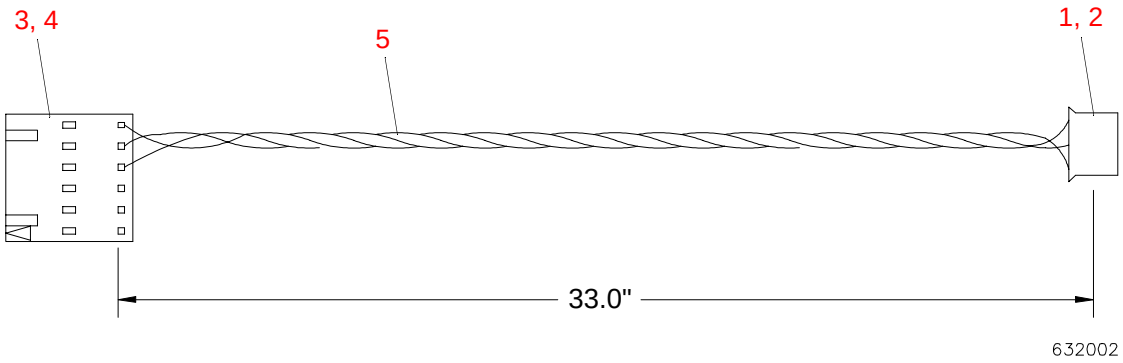
Figure 3-51: Pan EOT Cable Assembly

Tilt COT Cable Assembly

25.9663.2002 Rev 0

Refer to Figure 3-52.

No.	Item	Qty.	UM.	Description
1	52.6467.0003	1	EA	CONN, FEM PLUG 3 POS 30-24 AWG CRIMP PHR
2	52.6467.0024	3	EA	CONTACT, SOCKET 30-24AWG CRIMP (REEL) PH (JST)
3	52.6524.0006	1	EA	CONN, HOUSING 6POS RECEPTACLE
4	52.8346.0001	3	EA	CONTACT, 24-30AWG FEMALE CRIMP
5	73.5126.0029	2.75	FT	WIRE, 26AWG 3COND 300V 80C <BLK-RED-WHT> UL1061, 19 STRND



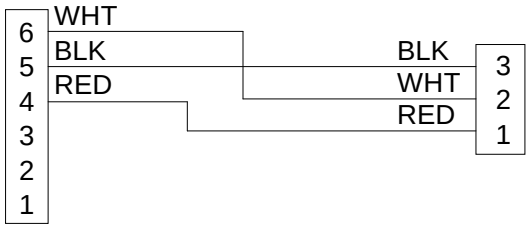


Figure 3-52: Tilt COT Cable Assembly

AC Line Input Cable Assembly

25.9663.2015 Rev A

Refer to Figure 3-53.

No.	Item	Qty.	UM.	Description
1	52.6541.0003	1	EA	CONN, CHASSIS PWR INLET 3POLE LOCKING
2	52.8231.0005	1	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
3	52.8331.0003	3	EA	RECEPT, FASTON .187" 16-14AWG PIDG BLUE (REEL) .170"ID
4	73.3516.0504	0.42	FT	WIRE, 16AWG 300V 105C PVC GRN/YEL UL1569

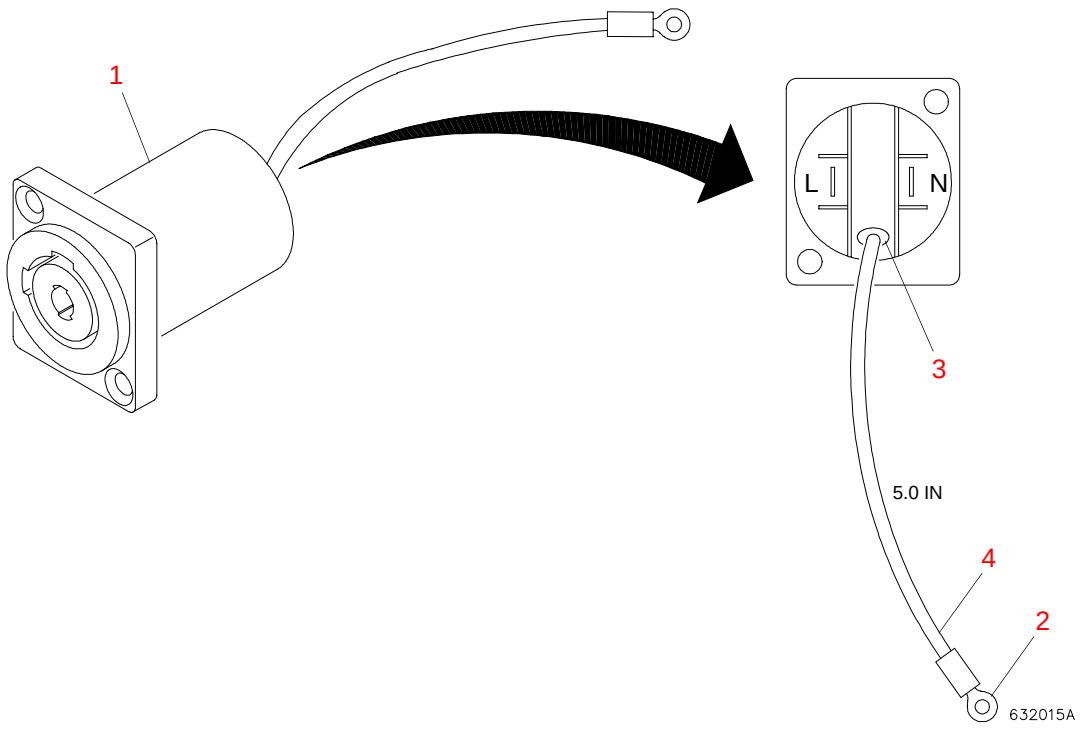


Figure 3-53: AC Line Input Cable Assembly

Incandescent LVS AC Input Cable Assembly

25.9663.2016.01 Rev 0

Refer to Figure 3-54.

No.	Item	Qty.	UM.	Description
1	52.8231.0005	4	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
2	52.8331.0003	2	EA	RECEPT, FASTON .187" 16-14AWG PIDG BLU REEL
3	55.2186.0001	2	EA	CABLE TIE, .10"WD 4.00"LG SMALL
4	73.7089.0000	9.33	FT	WIRE, 22AWG BLK 300V TEFLON STRANDED
5	73.7089.0009	9.33	FT	WIRE, 22AWG WHT TEFLON STRANDED
6	73.7089.0504	9.33	FT	WIRE, 22AWG 300V 200C TEF GRN/YEL UL1180

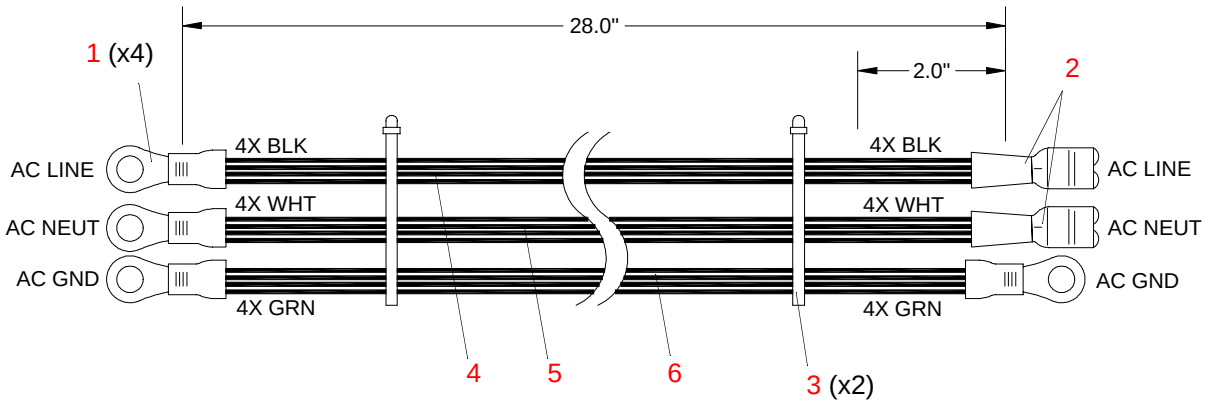


Figure 3-54: Incandescent LVS AC Input Cable Assembly

Arc LVS AC Input Cable Assembly

25.9663.2016.11 Rev 0

Refer to Figure 3-55.

No.	Item	Qty.	UM.	Description
1	52.8231.0005	4	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
2	52.8298.1160	2	EA	WIRE, FERRULE, 1X 16 AWG L2-8MM BLK
3	55.2186.0001	2	EA	CABLE TIE, .10"WD 4.00"LG SMALL
4	73.7089.0000	9.33	FT	WIRE, 22AWG BLK 300V TEFLON STRANDED
5	73.7089.0009	9.33	FT	WIRE, 22AWG WHT TEFLON STRANDED
6	73.7089.0504	9.33	FT	WIRE, 22AWG 300V 200C TEF GRN/YEL UL1180

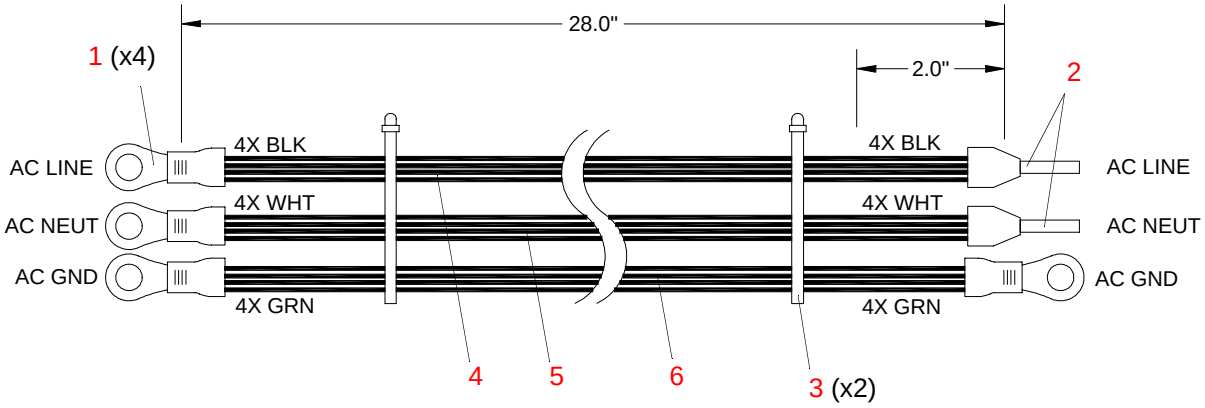


Figure 3-55: Arc LVS AC Input Cable Assembly

LVS Chassis Ground Cable Assembly

25.9663.2017 Rev B

Refer to Figure 3-56.

No.	Item	Qty.	UM.	Description
1	52.8231.0005	2	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
2	73.3516.0504	0.25	FT	WIRE, 16AWG 300V 105C PVC GRN/YEL UL1569

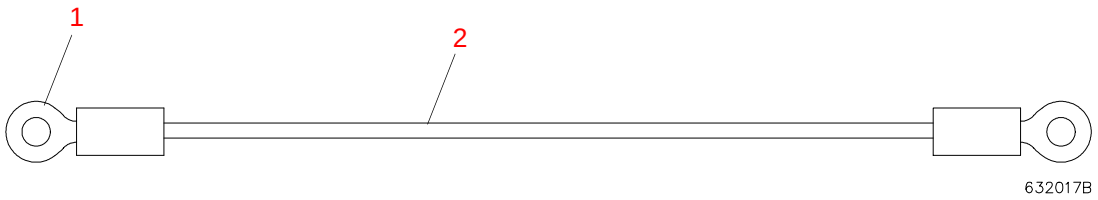


Figure 3-56: LVS Chassis Ground Cable Assembly

Head to Backcap Ground Cable Assembly

25.9663.2018 Rev C

Refer to Figure 3-57.

No.	Item	Qty.	UM.	Description
1	55.2036.0001	2	EA	SLEEVE, 1/16" ROPE DIA. ALUM OVAL COMPRESSION
2	73.7188.0002	2.17	FT	WIRE ROPE, 1/16" ROPE DIA. 7X7 GALV STEEL

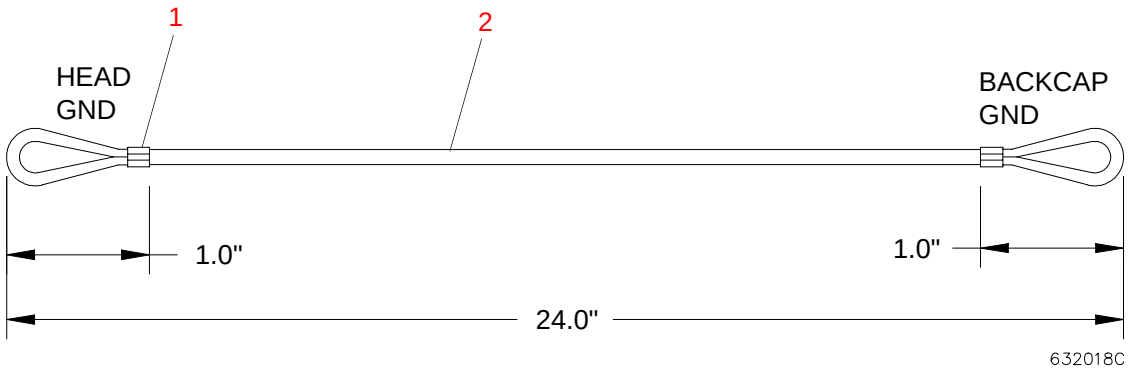


Figure 3-57: Head to Backcap Ground Cable Assembly

Yoke to Head Ground Cable Assembly

25.9663.2019 Rev A

Refer to Figure 3-58.

No.	Item	Qty.	UM.	Description
1	52.8231.0005	2	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
2	73.7089.0504	4	FT	WIRE, 22AWG 300V 200C TEF GRN/YEL UL1180

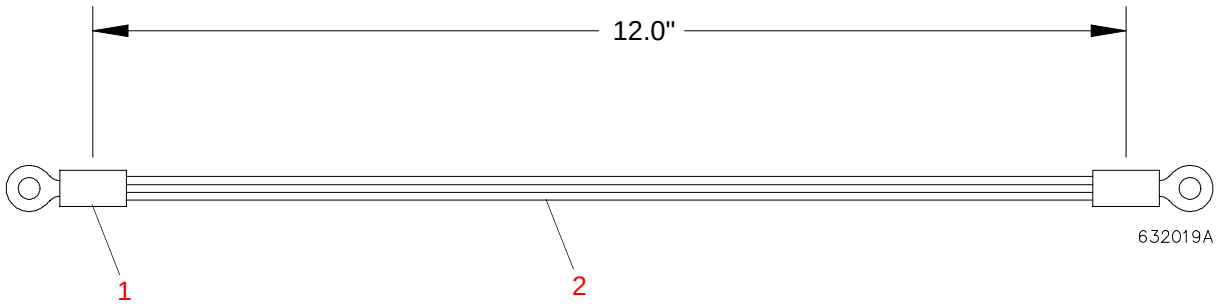


Figure 3-58: Yoke to Head Ground Cable Assembly

Pan/Tilt Control Cable Asembly

25.9663.2020 Rev A

Refer to Figure 3-59.

No.	Item	Qty.	UM.	Description
1	52.6224.0020	1	EA	HOUSING, 20POS 26-22AWG PRELOADED MT RECEPT DBL ROW
2	52.6224.1020	1	EA	COVER, FRONT 20POS MT LATCHING
3	52.6224.2020	1	EA	COVER, BACK 20POS MT
4	52.6524.0005	2	EA	CONN, HOUSING 5POS RECEPTACLE
5	52.6588.0006	2	EA	HOUSING, 6POS XH 250V/3A 2.5MMPITCH -USE SXH CONTACTS
6	52.7007.0001	8	EA	CONTACT, 28-22AWG PHOSPHOR BRONZE TIN-PLT SXH
7	52.8346.0001	10	EA	CONTACT, 24-30AWG FEMALE CRIMP
8	73.5116.0123	2.67	FT	WIRE, 24AWG 4COND TW 300V 80C <BLK-BRN-RED-ORG> UL1061
9	73.5124.1289	2.33	FT	WIRE, 24AWG 5COND 300V 80C (BLK-BRN-RED-GRY-WHT)

Pan/Tilt Control Cable Asembly (continued)

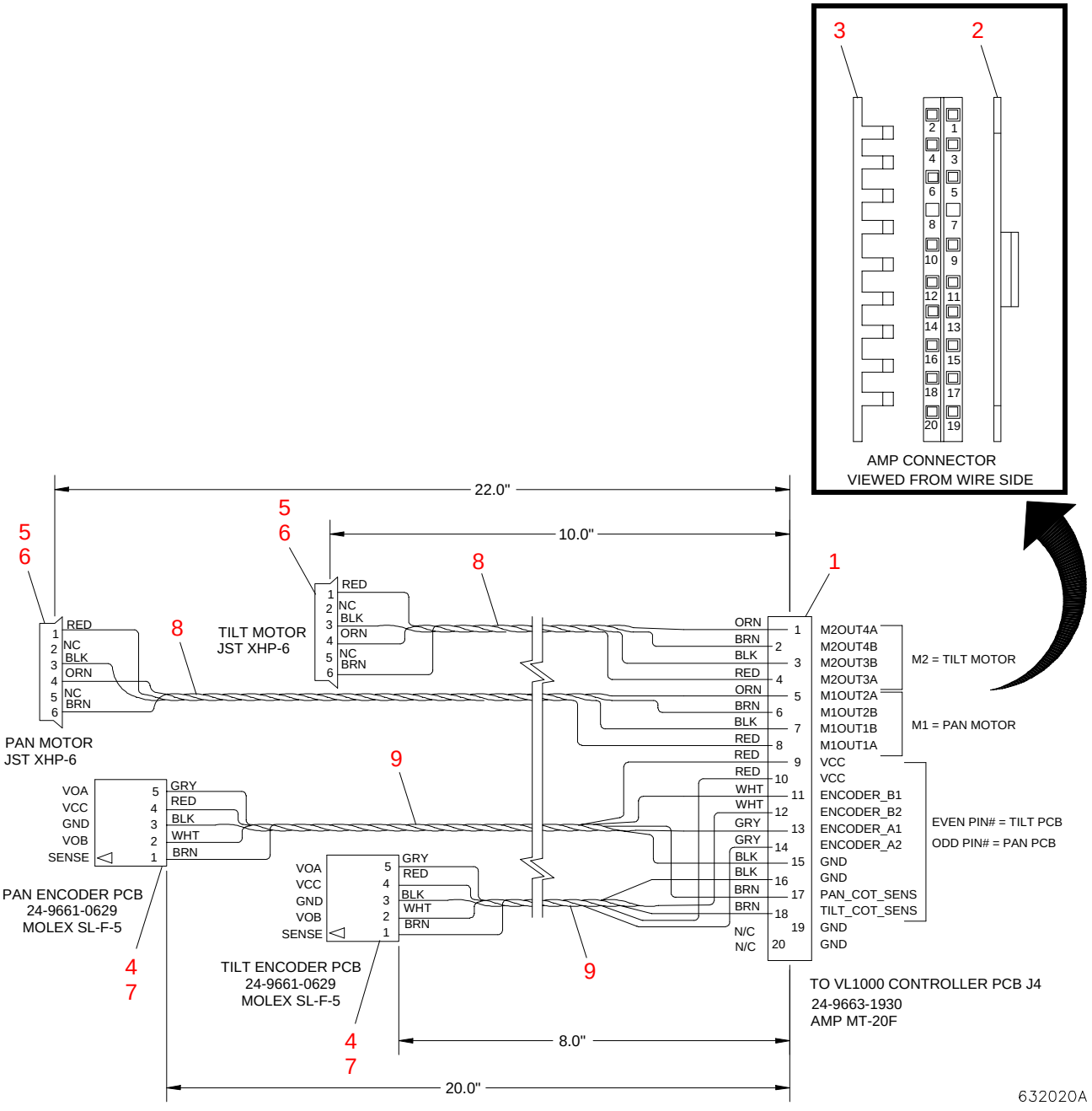


Figure 3-59: Pan/Tilt Control Cable Assembly

Ballast Control Link Cable Assembly

25.9663.2021 Rev 0

Refer to Figure 3-60.

No.	Item	Qty.	UM.	Description
1	52.6396.2204	1	EA	RECEPT, 4POS MTA100 W/POL TAB RED CLSD END
2	52.6524.0004	1	EA	CONN, HOUSING 4POS RECEPTACLE
3	52.8367.0001	4	EA	CONTACT, 22-24AWG FEMALE CRIMP
4	55.2186.0001	2	EA	CABLE TIE, .10"WD 4.00"LG SMALL
5	73.5122.0259	2	FT	WIRE, 22AWG 4COND 300V 80C <BLK-RED-GRN-WHT> UL1061, 19 STRAND

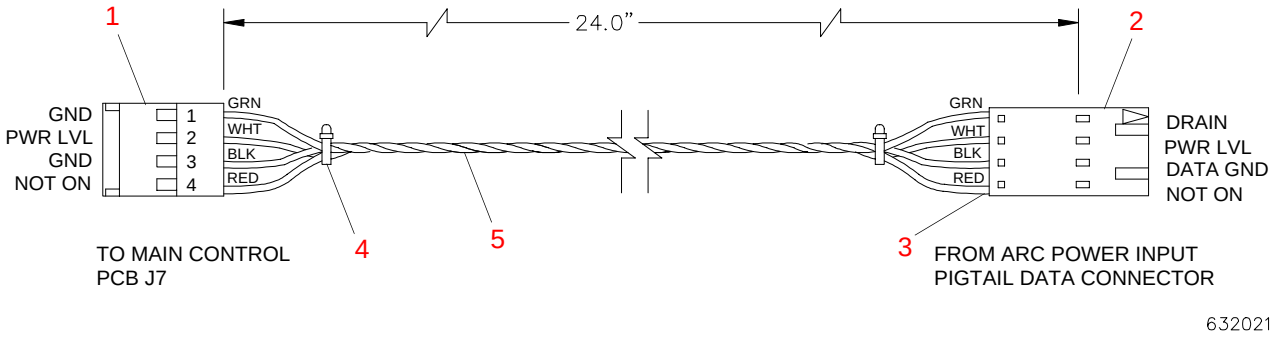


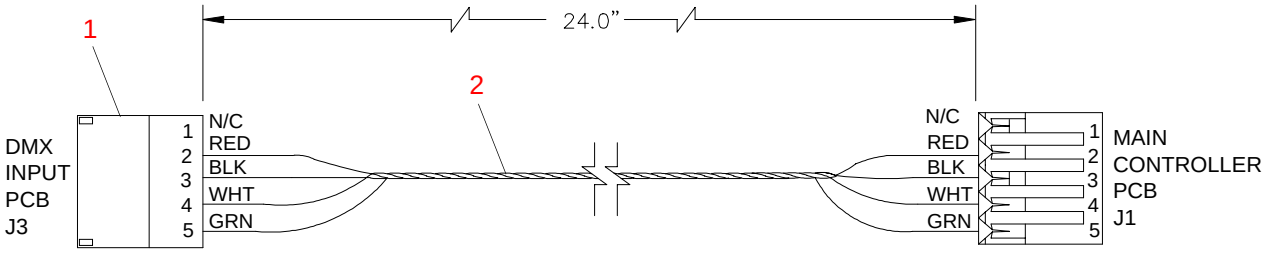
Figure 3-60: Ballast Control Link Cable Assembly

Data I/O Link Cable Assembly

25.9663.2022 Rev A

Refer to Figure 3-61.

No.	Item	Qty.	UM.	Description
1	52.6396.2205	2	EA	RECEPT, 5POS MTA100 W/POL TAB RED CLSD END
2	73.5122.0259	2	FT	WIRE, 22AWG 4COND 300V 80C <BLK-RED-GRN-WHT> UL1061, 19 STRAND



PIN	COLOR	DMX SIGNAL	VARI-LITE SIGNAL
1	N/C	-	-
2	RED	COM IN+	BDCAST+
3	BLACK	COM IN-	BDCAST-
4	WHITE	COM OUT+	REPLY+
5	GREEN	COM OUT-	REPLY-

632022A

Figure 3-61: Data I/O Link Cable Assembly

LVS DC Output Cable Assembly

25.9663.2024 Rev A

Refer to Figure 3-62.

No.	Item	Qty.	UM.	Description
1	52.6442.1805	1	EA	RECEPT, MTA156 W/TAB ORN 5POS 18AWG CLOSED END
2	52.8231.0005	2	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
3	55.2186.0001		EA	CABLE TIE, .10"WD 4.00"LG SMALL
4	73.3518.0002	3	FT	WIRE, 18AWG 300V 105C PVC RED UL1569
5	73.3518.0010	3	FT	WIRE, 18AWG 300V 105C PVC BLK UL1569

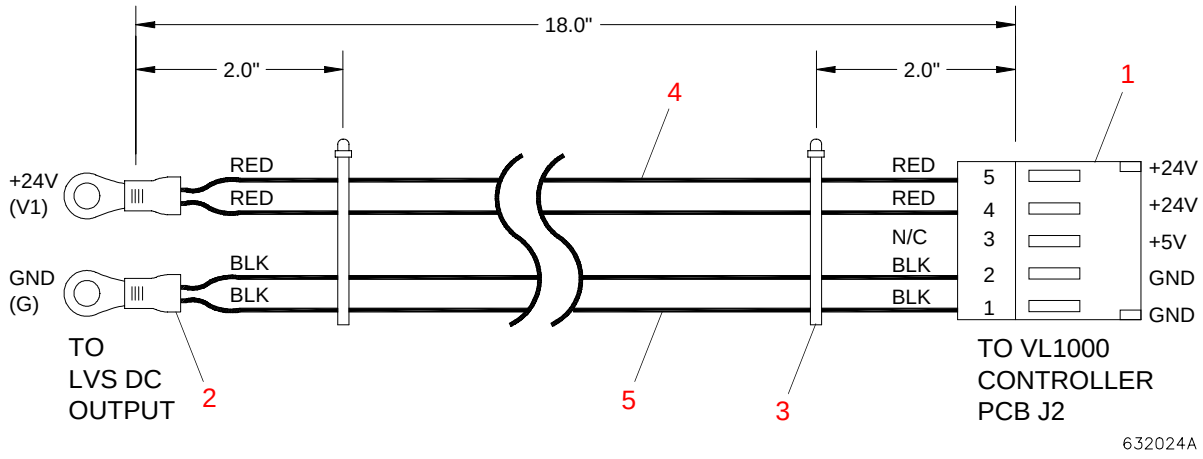


Figure 3-62: LVS DC Output Cable Assembly

Incandescent Power Input Cable Assembly

25.9663.2030 Rev A

Refer to Figure 3-63.

No.	Item	Qty.	UM.	Description
1	52.6274.2313	1	EA	STRAIN RELIEF, SKINTOP FLEX TYPE PG13 BLK
2	52.8231.0005	1	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
3	52.8298.1160	2	EA	FERRULE, WIRE 1X16 AWG L2=8MM BLACK
4	55.2268.0187	1	FT	HEATSHRINK, 3/16" CLEAR KYNAR VDE UL 600V 150DEG C
5	55.2268.0500	0.13	FT	HEATSHRINK, 1/2" CLEAR KYNAR VDE UL 600V 150DEG C
6	73.9636.0153	4	FT	CORDAGE, 1.5/3 750V 60C EURO BLK HD-22 11MMOD

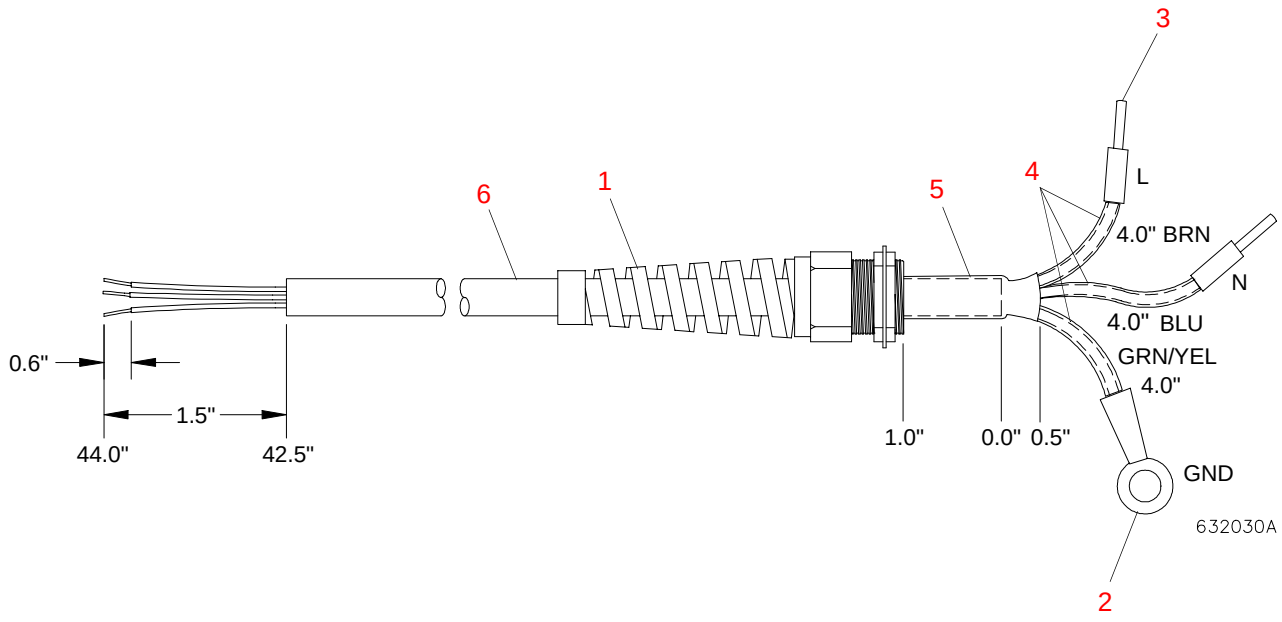


Figure 3-63: Incandescent Power Input Cable Assembly

Incandescent Lamp Power Cable Assembly

25.9663.2033 Rev E

Refer to Figure 3-64.

No.	Item	Qty.	UM.	Description
1	25.9663.2018	1	EA	CABLE ASSY, HEAD TO BACKCAP GND
2	52.8298.1160	2	EA	FERRULE, WIRE 1X16 AWG L2=8MM BLACK
3	52.8386.0001	2	EA	CONN, BUTT SPLICE 16-22AWG UNISULATED SOLISTRAND
4	55.2186.0002	1	EA	CABLE TIE, .09"WD 3.750"LG TEFZEL
5	55.2200.0003	0.33	FT	HEATSHRINK, 3/16" VITON
6	55.2260.0133	4.42	FT	SLEEVING, FIBERGLASS .133" ID
7	55.2260.0294	2	FT	SLEEVING, FIBERGLASS .294" ID
8	73.6616.0011	4	FT	WIRE, 16AWG 600V 600C MICA TAPE TAN
9	73.7089.0001	16	FT	WIRE, 22AWG BRN 300V TEFLON STRANDED
10	73.7089.0006	16	FT	WIRE, 22AWG VIO TEFLON STRANDED

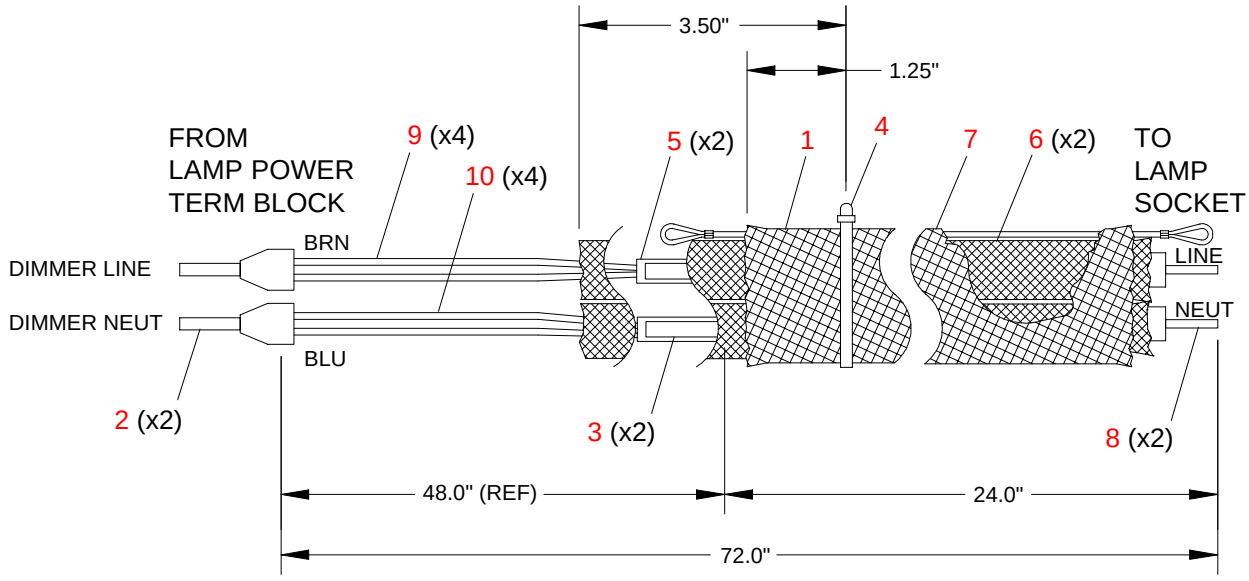


Figure 3-64: Incand Power to Lamp Socket Cable Assembly

Arc Power to Ignitor Cable Asembly

25.9663.2035 Rev B

Refer to Figure 3-65.

No.	Item	Qty.	UM.	Description
1	52.8231.0005	2	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
2	52.8298.2160	2	EA	FERRULE, WIRE 2X16 AWG L2=8MM BLACK
3	55.2186.0001	2	EA	CABLE TIE, .10"WD 4.00"LG SMALL
4	55.6699.0003	2.67	FT	SLEEVING, 1/2"NOM.DIA. POLY EXP BRAIDED
5	73.6222.0003	12	FT	WIRE, 22AWG 600V 200C TFE ORN UL1199
6	73.6222.0007	12	FT	WIRE, 22AWG 600V 200C TFE VIO UL 1199

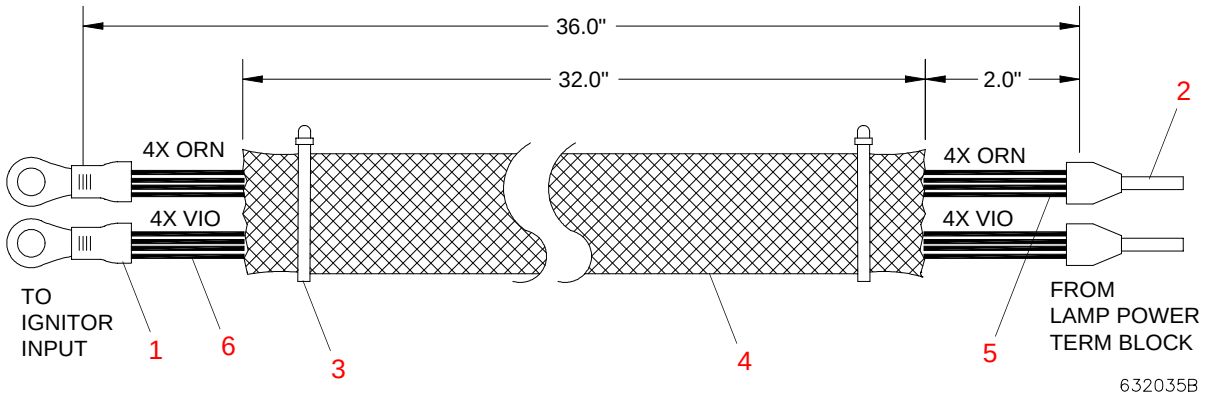


Figure 3-65: Arc Power to Ignitor Cable Assembly

Ignitor to Lamp Socket Cable Assembly

25.9663.2036 Rev B

Refer to Figure 3-66.

No.	Item	Qty.	UM.	Description
1	25.9663.2018	1	EA	CABLE ASSY, HEAD TO BACKCAP GND
2	52.8231.0005	2	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
3	55.2186.0001	1	EA	CABLE TIE, .10"WD 4.00"LG SMALL
4	55.2260.0294	2	FT	SLEEVING, FIBERGLASS .294"ID
5	73.7100.0001	5	FT	WIRE, 16AWG 20KVDC 41/32 STRD 200C SILICONE

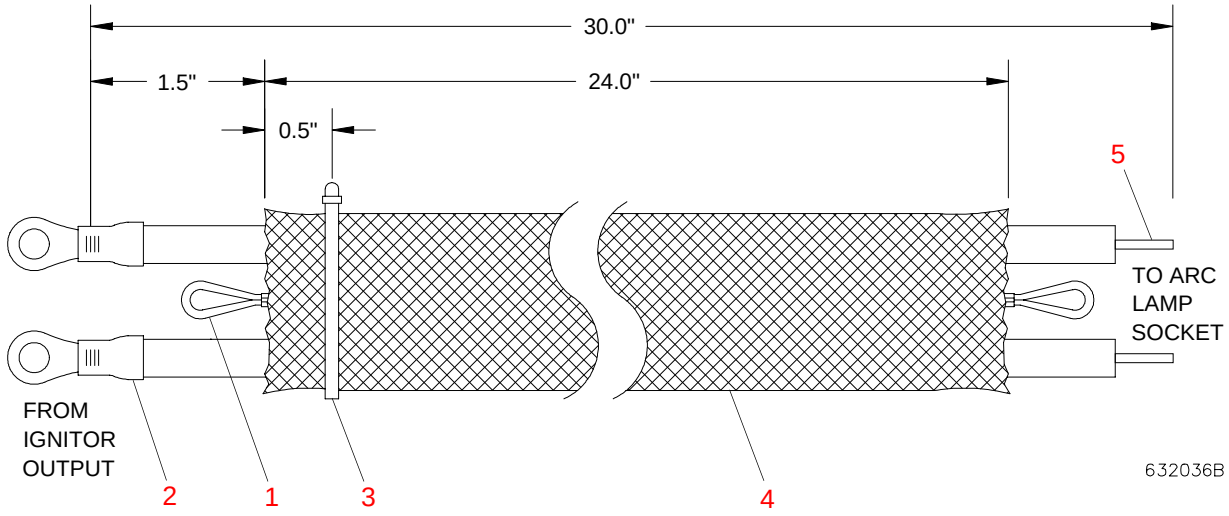


Figure 3-66: Ignitor to Lamp Socket Cable Assembly

Shutter Harness Cable Assembly

25.9663.2040 Rev C

Refer to Figure 3-67.

No.	Item	Qty.	UM.	Description
	04.9663.2040.00	1	EA	LABEL SET, SHUTTER HARNESS
1	52.6224.0040	1	EA	HOUSING, 40POS 26-22AWG PRELOADED MT RECEPT DBL ROW
2	52.6224.1040	1	EA	COVER, FRONT 40POS MT LATCHING
3	52.6224.2040	1	EA	COVER, BACK 40POS MT
4	52.6661.0006	8	EA	CONN, RECEPT 6CIR WIRE TO WIRE 1.25MM PITCH
5	52.8387.0001	32	EA	CONTACT, 26-28AWG FEMALE CRIMP 1.25MM PITCH (REEL)
6	55.2186.0001	15	EA	CABLE TIE, .10"WD 4.00"LG SMALL
7	55.6699.0004	.5	FT	SLEEVING, 3/4"NOM.DIA. POLY EXP BRAIDED
8	73.5126.0123	17.67	FT	WIRE, 26AWG 4COND TW 300V 80C (BLK-BRN-RED-ORG)

Shutter Harness Cable Assembly (continued)

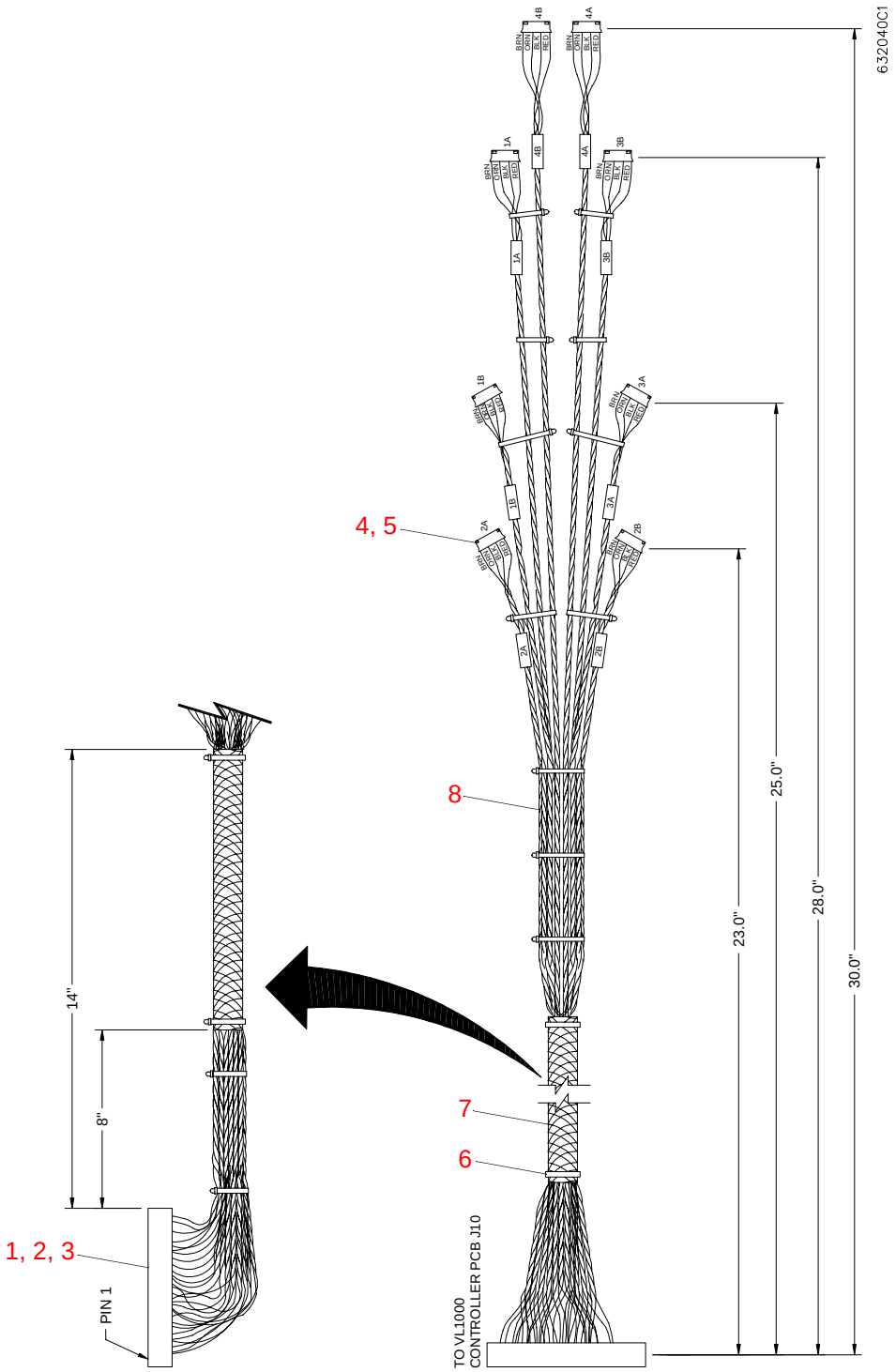


Figure 3-67: Shutter Harness Cable Assembly

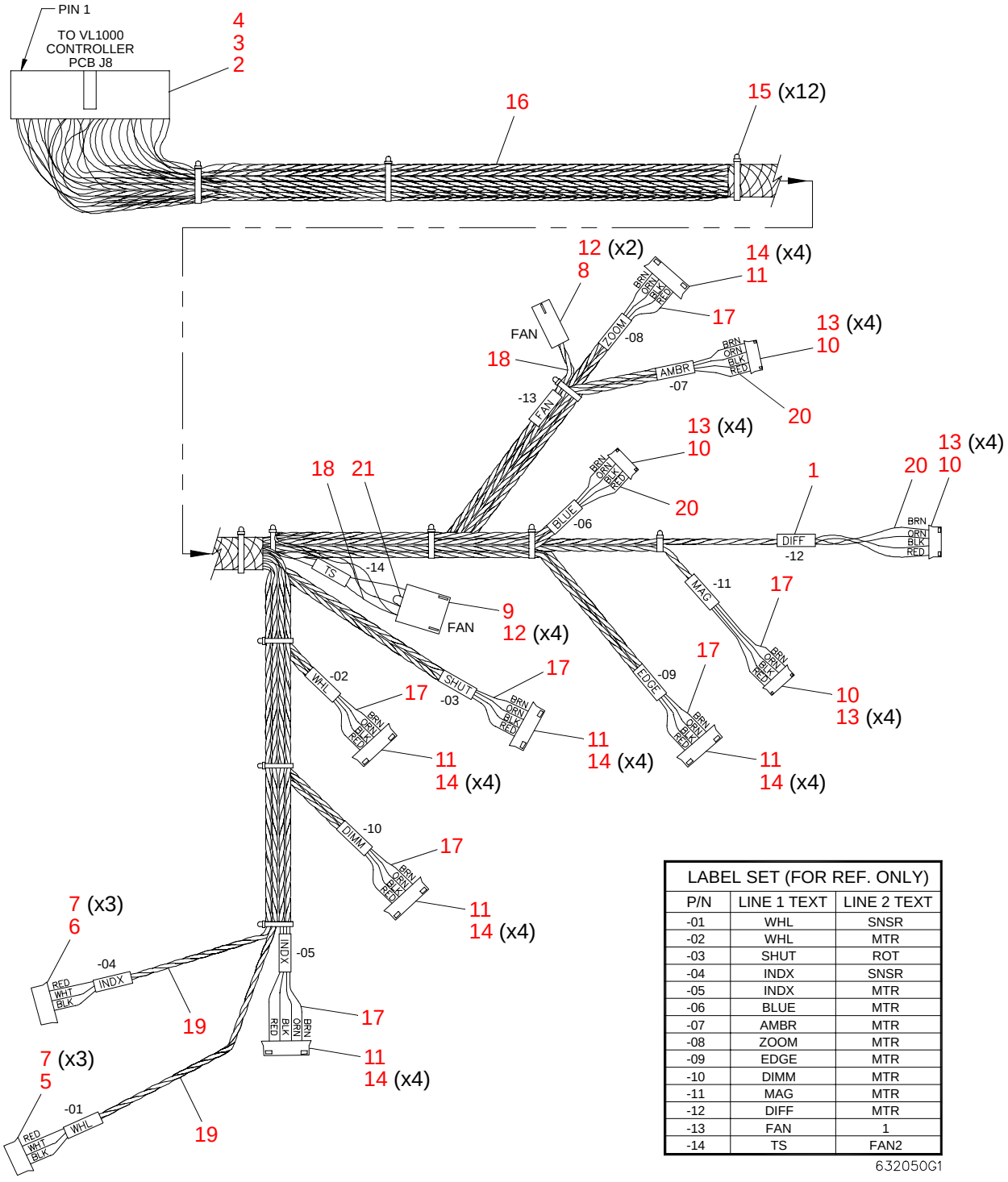
Color/Gobo/Lens Harness Cable Assembly

25.9663.2050 Rev H

Refer to Figure 3-68.

No.	Item	Qty.	UM.	Description
1	04.9663.2050.00	1	EA	LABEL SET, COLOR/GOBO/LENS HARNESS
2	52.6224.0050	1	EA	HOUSING, 50POS 26-22AWG PRELOADED MT RECEPT DBL ROW
3	52.6224.1050	1	EA	COVER, FRONT 50POS MT LATCHING
4	52.6224.2050	1	EA	COVER, BACK 50POS MT
5	52.6467.0003	1	EA	CONN, FEM PLUG 3 POS 30-24 AWG CRIMP PHR
6	52.6467.0004	1	EA	CONN, FEM PLUG 4 POS 30-24 AWG CRIMP PHR
7	52.6467.0024	6	EA	CONTACT, SOCKET 30-24AWG CRIMP (REEL) PH (JST)
8	52.6524.0002	1	EA	CONN, HOUSING 2POS RECEPTACLE
9	52.6524.0004	1	EA	CONN, HOUSING 4POS RECEPTACLE
10	52.6661.0006	4	EA	CONN, RECEPT 6CIR WIRE TO WIRE 1.25MM PITCH
11	52.6662.0006	6	EA	HOUSING, 6POS 125V/2A 2.00MMPITCH
12	52.8346.0001	6	EA	CONTACT, 24-30AWG FEMALE CRIMP
13	52.8387.0001	16	EA	CONTACT, 26-28AWG FEMALE CRIMP 1.25MM PITCH (REEL)
14	52.8388.0001	24	EA	CONTACT, 24-30AWG FEMALE CRIMP 2.00MMPITCH (REEL)
15	55.2186.0001	12	EA	CABLE TIE, .10"WD 4.00"LG SMALL
16	55.6699.0004	0.50	FT	SLEEVING, 3/4"NOM.DIA. POLY EXP BRAIDED
17	73.5116.0123	12.75	FT	WIRE, 24AWG 4COND TW 300V 80C <BLK-BRN-RED-ORG> UL1061
18	73.5126.0002	2.42	FT	WIRE, 26AWG 2COND 300V 80C <BLK-RED> UL1061, 19STRND
19	73.5126.0029	5.42	FT	WIRE, 26AWG 3COND 300V 80C <BLK-RED-WHT> UL1061, 19STRND
20	73.5126.0123	10.42	FT	WIRE, 26AWG 4COND TW 300V 80C (BLK-BRN-RED-ORG)
21	73.7094.0001	.17	FT	WIRE, 26AWG, TEFLON, RED, 19 STRAND

Color/Gobo/Lens Cable Assembly (continued)



LABEL SET (FOR REF. ONLY)		
P/N	LINE 1 TEXT	LINE 2 TEXT
-01	WHL	SNSR
-02	WHL	MTR
-03	SHUT	ROT
-04	INDX	SNSR
-05	INDX	MTR
-06	BLUE	MTR
-07	AMBR	MTR
-08	ZOOM	MTR
-09	EDGE	MTR
-10	DIMM	MTR
-11	MAG	MTR
-12	DIFF	MTR
-13	FAN	1
-14	TS	FAN2

632050G1

Figure 3-68: Color/Gobo/Lens Harness Cable Assembly

Notes

Arc Ballast Assembly

Arc Ballast Assembly

21.9663.1900 Rev E

Refer to Figure 3-69.

No.	Item	Qty.	UM.	Description
1	04.9640.0374	1	EA	LABEL, P.E. GROUND
2	04.9663.1920	1	EA	LABEL, PRODUCT VL1000 APS
3	06.6032.0009	1	EA	CABLE MARKER TIE, WHITE 19 X 7.4"
4	10.9663.1911	1	EA	ENCLOSURE BALLAST
5	10.9663.1912	1	EA	COVER, ENCLOSURE BALLAST
6	10.9663.1915	3	EA	TOROID, DISK MOUNTING 1 1/2"OD 3/4"ID
7	10.9663.1918	3	EA	PAD CLAMP, TOROID 1 5/8"OD .125"THK
8	10.9663.1919	3	EA	GAP PAD, VO ULTRASOFT 3.0"OD .120"THK
9	10.9669.0034	1	EA	PLATE, NUT
10	12.9663.1913	2	EA	ASSY, BALLAST -HEATSINK
11	24.9663.1901	1	EA	PCB ASSY, BALLAST 625W
12	24.9663.1902	1	EA	PCB ASSY, BALLAST RIDER 625W
13	25.9663.1907	1	EA	ASSY, CABLE 575W BALLAST I/O
14	51.5025.0003	1	EA	PAD, THERMALLY CONDUCTIVE HF105 .75 X .50 IN
15	51.5025.0004	1	EA	PAD, THERMALLY CONDUCTIVE HF105 1.50 X 1.00 IN
16	51.5038.0008	17	EA	CLAMP, HEATSINK MAX CLIP08 TO218/TO247
17	51.9663.1905	1	EA	PAD, THERMALLY CONDUCTIVE HF625AC 10.25" X 1.15"
18	51.9663.1906	1	EA	PAD, THERMALLY CONDUCTIVE HF625AS 6.35" X 1.15"
19	53.2002.0001	7	EA	NUT, 6-32 KEP ZINC PLATED
20	53.2011.0001	17	EA	NUT, #8
21	53.6517.0002	4	EA	SCREW, 10-32 X 3/8"LG PPB BLACK SEMS
22	53.6525.0001	1	EA	SCREW, 6-32 X 5/16" PPZ
23	53.6546.0002	16	EA	SCREW, 8-32 X 5/16" PPZ
24	53.6546.0003	1	EA	SCREW, 8-32 X 7/16" PPZ
25	53.6558.0007	5	EA	SCREW, 6-32 X 1/4" PPZ SEMS-EXT WSHR
26	53.6575.0009	4	EA	SCREW, 8-32 X 3/8"LG PPZ SEMS EXT BLACK ZINC
27	53.6575.0021	8	EA	SCREW, 8-32 X 5/8"LG PPZ BLACK TYPE F
28	53.6593.0001	3	EA	SCREW, 10-32 X 1" PPB

No.	Item	Qty.	UM.	Description
29	53.6607.0002	4	EA	SCREW, 6-32 X 1/4" PFB
30	55.2001.0008	2	EA	PCB SUPPORT, 1" SPACING SNAP-IN NYLON
31	55.2178.0001	1	EA	CABLE ANCHOR MOUNT, #8 SCREW MOUNTING
32	55.2214.0001	1	EA	SPACER, 10 THRU 11/64LX5/16R
33	55.3303.0008	17	EA	WASHER, #8 LOCK INT.TOOTH SS
34	55.6623.0001	4	EA	WASHER, #10 FLAT
35	55.6696.0004	4	EA	BUMPER, RUBBER M/AII SHEET METAL FRAME
36	68.9663.1912	1	EA	PFC CHOKE
37	68.9663.1913	2	EA	IBC CHOKE

Arc Ballast Assembly (continued)

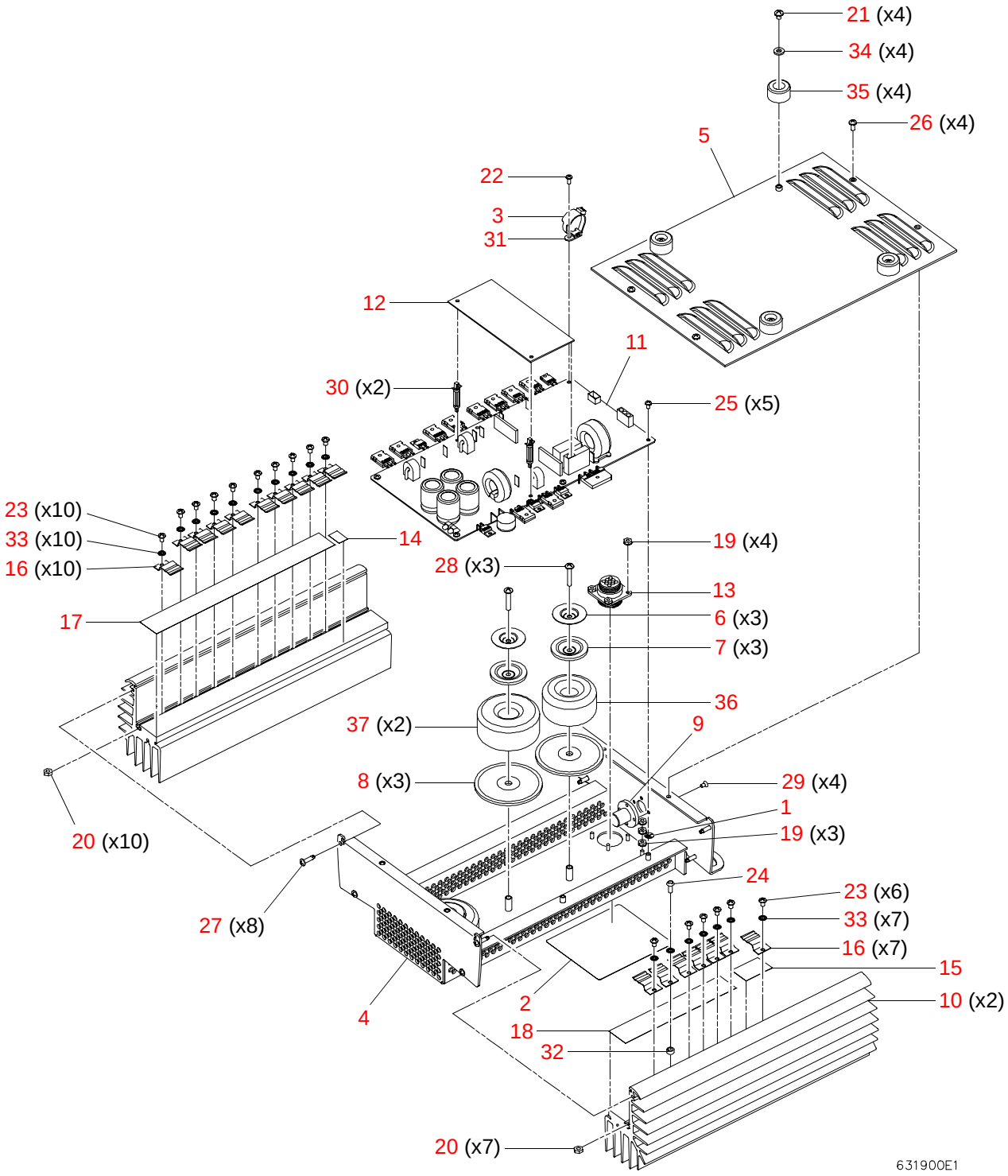


Figure 3-69: Arc Ballast Assembly

625W Ballast PCB

24.9663.1901 Rev B

Refer to Figure 3-70.

No.	Item	Qty.	UM.	Description	Ref.
1	11.9663.1901	1	EA	PCB, BALLAST 625W	-
2	23.9663.1925	1	EA	FAB ASSY, POTTED ZVT MAG-AMP	L103
3	52.6260.0004	1	EA	HEADER, 4POS MTA-100 SHROUDED STRAIGHT	J601
4	52.6370.0003	1	EA	HEADER ASSY, 3CIR SOCKET MNLOK FMLE	J102
5	52.6663.0014	1	EA	HEADER, 14PIN .025"SQ .665"STACK HT BOARD STACKING	J101
6	52.6663.0015	1	EA	HEADER, 15PIN .025"SQ .665"STACK HT BOARD STACKING	J201
7	52.8252.0001	10	EA	TERM, .250"TAB PC QUICK-FIT BRASS	J103-J106 & J202-J207
8	60.1230.0000	1	EA	RES, 1/4W ZERO OHM CF	R111
9	60.1230.1004	2	EA	RES, 1/4W 1% 10.0 K MF	R611 & R612
10	60.1230.1054	1	EA	RES, 1/4W 1% 10.5 K MF	R118
11	60.1230.1074	1	EA	RES, 1/4W 1% 10.7 K CF	R603
12	60.1230.1501	2	EA	RES, 1/4W 1% 15.0 OHM MF	R204 & R205
13	60.1230.1744	1	EA	RES, 1/4W 1% 17.4 K MF	R121
14	60.1230.2004	1	EA	RES, 1/4W 1% 20.0 K MF	R613
15	60.1230.4645	2	EA	RES, 1/4W 1% 464.0 K MF	R209 & R210
16	60.1230.4755	2	EA	RES, 1/4W 1% 475.0 K MF	R218 & R219
17	60.1230.5113	1	EA	RES, 1/4W 1% 5.11 K MF	R211
18	60.1230.5115	2	EA	RES, 1/4W 1% 511.O K MF	R119 & R120
19	60.1230.6493	1	EA	RES, 1/4W 1% 6.49 K MF	R220
20	60.1230.7505	2	EA	RES, 1/4W 1% 750.0 K MF	R116 & R117
21	60.1420.1305	1	EA	RES, 1/4W 5% 130.0 K CF	R123
22	60.1420.2001	6	EA	RES, 1/4W 5% 20.0 OHM CF	R212, R215 & R222-R225
23	60.1420.2204	1	EA	RES, 1/4W 5% 2.2 K CF	R124
24	60.1420.2403	1	EA	RES, 1/4W 5% 2.4 K CF	R607
25	60.1420.3905	4	EA	RES, 1/4W 5% 390.0 K CF	R102, R103, R106 & R107
26	60.1420.4300	1	EA	RES, 1/4W 5% 4.3 OHM CF	R101

No.	Item	Qty.	UM.	Description	Ref.
27	60.1420.5105	2	EA	RES, 1/4W 5% 510.0 K CF	R114 & R115
28	60.1420.6800	1	EA	RES, 1/4W 5% 6.8 OHM CF	R601
29	60.1421.1201	2	EA	RES, 1/4W 5% 12.0 OHM CF	R110 & R112
30	60.1421.1205	1	EA	RES, 1/4W 5% 120.0 K CF	R104
31	60.1421.2003	1	EA	RES, 1/4W 5% 200.0 K CF	R608
32	60.1421.2202	1	EA	RES, 1/4W 5% 220.0 OHM CF	R109
33	60.1421.5100	3	EA	RES, 1/4W 5% 5.1 OHM CF	R113, R214 & R217
34	60.1422.1001	4	EA	RES, 1/4W 5% 1.0 K CF	R213, R216, R604 & R606
35	60.1422.2202	1	EA	RES, 1/4W 5% 22.0 K CF	R105
36	60.1424.2004	1	EA	RES, 1/4W 5% 20.0 K CF	R610
37	60.1424.8205	1	EA	RES, 1/4W 5% 820.0 K CF	R122
38	60.1425.1003	1	EA	RES, 1/4W 5% 100.0 OHMS CF	R602
39	60.1425.5603	1	EA	RES, 1/4W 5% 560.0 OHM CF	R609
40	60.2150.5101	1	EA	RES, 1/2W 5% 51 OHM METAL OXIDE	R108
41	60.3430.1002	1	EA	RES, 1W 5% 100.0 OHM METAL OXIDE	R208
42	60.4450.2402	1	EA	RES, 2W 5% 240.0 OHM MET OXIDE	R605
43	60.9245.0100	1	EA	RES, 30W 1% 0.1 OHM TO-220 POWER FILM	R201
44	62.2110.0474	2	EA	CAP, .47UF 250V RAD METALLIZED POLYEST 15MM L.S. 10%	C214 & C217
45	62.2112.0337	4	EA	CAP, 330 UF 250V RAD ALUM 25MM X 30MM	C114-C117
46	62.2115.4706	1	EA	CAP, 47UF 16V RAD ALUM ELECTRO 105DEG C 20%	C602
47	62.3007.0105	2	EA	CAP, 1.0 UF 275VAC X2 RFI SUPPRESSOR 10%	C103 & C104
48	62.3013.0105	3	EA	CAP, 1UF 630V RAD MET PLYPLN 10%	C107, C201 & C202
49	62.3017.0102	3	EA	CAP, 1000PF 250V RAD CER DISC 20% Y-TYPE	C101, C102 & C231
50	62.3017.0222	2	EA	CAP, 2200PF 250V RAD CER DISC Y-CLASS	C105 & C106
51	62.3021.2102	1	EA	CAP, 1000PF 200V RAD CER 10% X7R	C112
52	62.3021.2221	1	EA	CAP, 220PF 200V RAD CER 20% X7R	C211
53	62.3021.2331	2	EA	CAP, 330PF 200V RAD CER 20% X7R	C207 & C208
54	62.3022.0103	2	EA	CAP, .01UF 50V RAD CER 10% X7R	C610 & C611
55	62.3023.0104	10	EA	CAP, .1UF 50V RAD CER 20% Z5U	C108, C213, C216, C221, C224, C226, C229, C607, C608 & C609
56	62.3023.0473	6	EA	CAP, .47UF 50V RAD CER 20% Z5U	C109, C118, C119, C218, C225 & C230
57	62.3027.0102	2	EA	CAP, 1000PF 1600V RAD POLYPROPYLENE .600" 10%	C203 & C601
58	62.3029.0333	1	EA	CAP, .033UF 1000V RAD POLYPROPYLENE .886" 10%	C204

No.	Item	Qty.	UM.	Description	Ref.
59	62.3033.0331	1	EA	CAP, 330PF 3000VDC 20% CERAMIC DISC	C113
60	62.4009.0107	4	EA	CAP, 100UF 35V RAD ALUM 8 X 11.5 MM 20%	C603-C606
61	62.4010.0106	1	EA	CAP, 10UF 50V RAD ALUM 4 X 11 MM 20%	C232
62	62.4010.0475	6	EA	CAP, 4.7UF 50V RAD ALUM 5 X 11 MM 20%	C212, C215, C222, C223, C227 & C228
63	63.2047.0085	2	EA	THERMOSTAT, 85DEG C PCB MT CLOSE ON RISE	TS101 & TS201
64	63.2050.0001	1	EA	VARISTOR, METAL OXIDE 300V RMS 165J 775V CLAMP	VR101
65	63.2055.0001	2	EA	THERMISTOR, 12A 0.7 OHM NTC INRUSH CURRENT LIMIT	NTC101 & NTC102
66	67.4019.0001	2	EA	FERRITE, BEAD ON LEADS .138"DIA X .206"L X .65"DIA LEADS	L601 & L602
67	68.4536.0002	1	EA	CHOKE, COMMON MODE FILTER 1.35MH 11A	L103
68	68.4563.0001	3	EA	TRANSFORMER, TOROIDAL CURRENT SENSE PE-51686	L104, L201 & L202
69	68.9661.1112	2	EA	TRANSFORMER, GATE DRIVE	T201 & T202
70	68.9663.1911	1	EA	RESONANT INDUCTOR	L101
71	68.9663.1923	1	EA	BIAS TRANSFORMER	T601
72	70.3727.0002	4	EA	FUSE CLIP, 1/4" PC BOARD TINNED BRASS	XF101 & XF102
73	70.3762.0020	2	EA	FUSE, 20A 250VAC VERY FAST ACT 1/4"X1 1/4" CERAMIC	F101 & F102
74	73.6016.0006	0.50	FT	WIRE, 16AWG 600V 105C PVC BLU UL1015	
75	80.2623.0001	2	EA	TRANSISTOR, 2N4401 NPN 40V 600MA	Q203 & Q206
76	80.2623.0003	3	EA	TRANSISTOR, 2N4403 PNP 40V 600MA TO-92	Q103, Q204, Q207
77	80.2628.0001	4	EA	TRANSISTOR, IXGH39N60BD1 IGBT 76A 600V	Q209-Q212
78	80.2643.0001	2	EA	TRANSISTOR, MPSW63 1W PNP DARLINGTON 30V 500MA 1W TO-92	Q205 & Q208
79	80.2648.0001	2	EA	TRANSISTOR, IXFH32N50 POWER MOSFET 500V 32A TO-247	Q201 & Q202
80	80.2652.0001	1	EA	TRANSISTOR, IXGH24N60CD1 IGBT 600V 48A LIGHTSPEED SERIES W/DIODE T0-24 0	Q101
81	80.2653.0001	1	EA	TRANSISTOR, IRFB9N60A MOSFET 600V 9.2A N-CH ENHANCEMENT TO-220	Q102
82	82.4308.4937	7	EA	DIODE, 1N4937 FAST 600V	D104, D208-D211, D213 & D214
83	82.4317.5819	3	EA	DIODE, 1N5819 RECTIFIER 40V	D110, D111 & D610
84	82.4323.0001	1	EA	DIODE, BRIDGE D25XB60 600V 25A SIP	BR549
85	82.4330.0001	3	EA	DIODE, RECTIFIER ULTRA FAST 600V 15A	D101, D201, D202
86	82.5302.4148	4	EA	DIODE, 1N4148 ULTRAFAST 75V 300MA	D107, D113, D204 & D205
87	82.5318.0160	3	EA	DIODE, MUR160, 600V, 1A	D602-D604
88	82.5322.0001	1	EA	DIODE, 1N4736A	D606

No.	Item	Qty.	UM.	Description	Ref.
89	82.5323.0001	4	EA	DIODE, MUR460 600V 4AMP ULTRAFAST	D103, D106, D203 & D219
90	82.5334.0001	1	EA	DIODE, 1N5245B ZENER VOLTAGE REGULATOR	D605
91	82.5340.0001	3	EA	DIODE, ZENER 1.5KE250A TVS 250V 1500W	D215, D216, D601
92	82.5351.0001	4	EA	DIODE, ZENER 20V 1W 5% DO-41 1N4747A	D108, D109, D217 & D218
93	82.5357.0001	1	EA	DIODE, RHRP1560 HYPERFAST RECTIFIER 600V 15A TO-220	D102
94	82.5359.0001	1	EA	DIODE, 1N5240B ZENER REGULATOR 10V 500MW AXIAL	D608
95	83.3117.0001	1	EA	IC, LM393 DUAL COMPARATOR	U604
96	84.7432.0001	1	EA	IC, TOP234P INTEGRATED OFFLINE SMPS CONTROLLER (CMOS)	U601
97	85.5120.0001	2	EA	IC, IR2110,1/2 BRIDGE DRIVER	U201 & U202
98	86.6110.0001	2	EA	IC, LTV817 SINGLE CHANNEL OPTOCOUPLER	U602 & U605
99	86.6111.0001	1	EA	IC, HCPL-2201 HI-SPEED OPTOCOUPLER LOGIC GATE TOTEM POLE OUTPUT	U603
100	88.8122.0001	1	EA	LED, RED, DIFFUSED,5300H1	D607
101	88.8122.0002	1	EA	LED, GRN, DIFFUSED,5300H5	D609

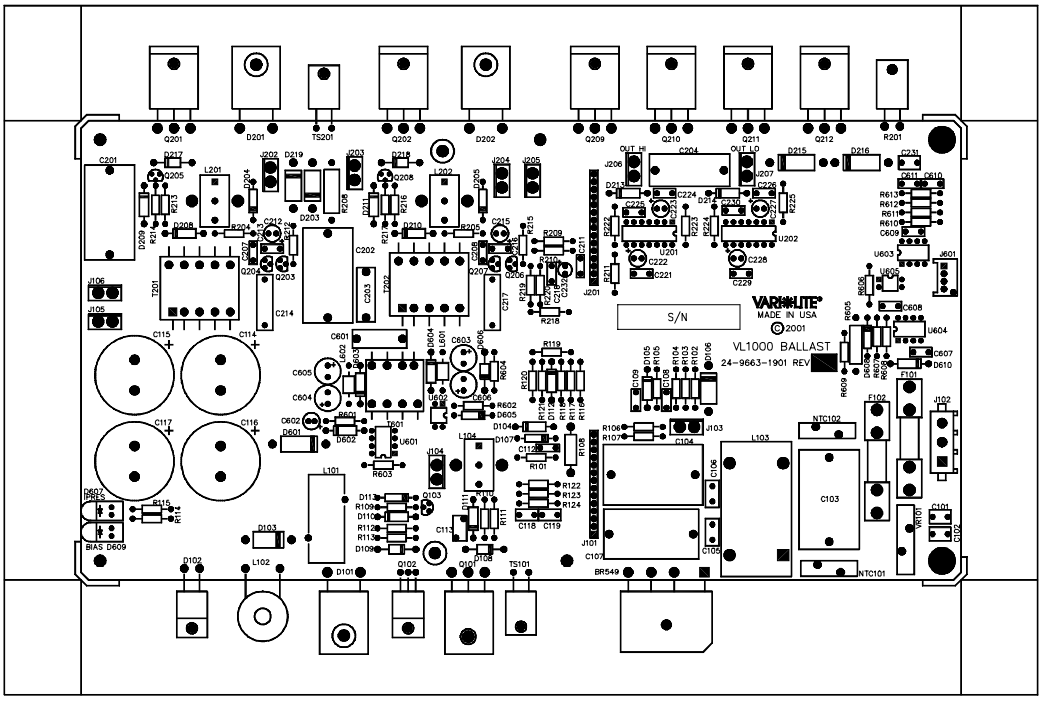


Figure 3-70: 625W Arc Ballast PCB

625W Ballast Rider PCB

24.9663.1902 Rev A

Refer to Figure 3-71.

No.	Item	Qty.	UM.	Description	Ref.
1	11.9663.1902	1	EA	PCB, BALLAST RIDER 625W	-
2	52.6662.0014	1	EA	SOCKET STRIP, 14PIN SGL ROW .100"PITCH	J301
3	52.6662.0015	1	EA	SOCKET STRIP, 15PIN SGL ROW .100"PITCH	J401
4	60.0460.1004	2	EA	RES, 1/8W 5% 10.0 K THK FLM CHIP SUR MT EIA-1206	R502, R503
5	60.9462.1003	3	EA	RES, 1/2W 5% 1.0 K 200V CHIP THK FLM SMT2010	R415, R420, R508
6	60.9463.0000	1	EA	RES, 1/8W 1% ZERO OHM 200V CHP THK FLM SMT1206	R402
7	60.9463.1001	1	EA	RES, 1/8W 1% 10.0 OHM 200V CHP THK FLM SMT1206	R427
8	60.9463.1004	3	EA	RES, 1/8W 1% 10.0 K 200V CHP THK FLM SMT1206	R406, R424, R425
9	60.9463.1005	1	EA	RES, 1/8W 1% 100.0 K 200V CHP THK FLM SMT1206	R314
10	60.9463.1023	1	EA	RES, 1/8W 1% 1.02 K 200V CHP THK FLM SMT1206	R401
11	60.9463.1214	1	EA	RES, 1/8W 1% 12.1K 200V CHP THK FLM SMT1206	R308
12	60.9463.1405	1	EA	RES, 1/8W 1% 140.0 K 200V CHP THK FLM SMT1206	R428
13	60.9463.2004	3	EA	RES, 1/8W 1% 20.0 K 200V CHP THK FLM SMT1206	R408, R409, R422
14	60.9463.2214	1	EA	RES, 1/8W 1% 22.1 K 200V CHP THK FLM SMT1206	R306
15	60.9463.2614	1	EA	RES, 1/8W 1% 26.1 K 200V CHP THK FLM SMT1206	R315
16	60.9463.3015	1	EA	RES, 1/8W 1% 301.0 K 200V CHP THK FLM SMT1206	R426
17	60.9463.3834	1	EA	RES, 1/8W 1% 38.3 K 200V CHP THK FLM SMT1206	R405
18	60.9463.4024	1	EA	RES, 1/8W 1% 40.2 K 200V CHP THK FLM SMT1206	R403
19	60.9463.4025	1	EA	RES, 1/8W 1% 402.0 K 200V CHP THK FLM SMT1206	R429
20	60.9463.4324	1	EA	RES, 1/8W 1% 43.2 K 200V CHP THK FLM SMT1206	R414

No.	Item	Qty.	UM.	Description	Ref.
21	60.9463.5113	2	EA	RES, 1/8W 1% 5.11 K 200V CHP THK FLM SMT1206	R301, R307
22	60.9463.6653	1	EA	RES, 1/8W 1% 6.65 K 200V CHP THK FLM SMT1206	R404
23	60.9463.7683	1	EA	RES, 1/8W 1% 7.68 K 200V CHP THK FLM SMT1206	R423
24	60.9464.1002	1	EA	RES, 1/8W 5% 100 OHM 200V CHP THK FLM SMT1206	R305
25	60.9464.1003	7	EA	RES, 1/8W 5% 1.0 K 200V CHP THK FLM SMT1206	R303, R412, R416, R501, R506, R507, R509
26	60.9464.1005	1	EA	RES, 1/8W 5% 100.0 K 200V CHP THK FLM SMT1206	R417
27	60.9464.1206	2	EA	RES, 1/8W 5% 1.2 MEG 200V CHP THK FLM SMT1206	R309, R410
28	60.9464.1503	1	EA	RES, 1/8W 5% 1.5 K 200V CHP THK FLM SMT1206	R505
29	60.9464.1505	1	EA	RES, 1/8W 5% 150.0 K 200V CHP THK FLM SMT1206	R430
30	60.9464.1605	1	EA	RES, 1/8W 5% 160.0 K 200V CHP THK FLM SMT1206	R302
31	60.9464.1914	1	EA	RES, 1/8W 5% 19.1 K 200V CHP THK FLM SMT1206	R431
32	60.9464.2003	1	EA	RES, 1/8W 5% 2.0 K 200V CHP THK FLM SMT1206	R313
33	60.9464.2004	3	EA	RES, 1/8W 5% 20.0 K 200V CHP THK FLM SMT1206	R407, R411, R418
34	60.9464.2005	1	EA	RES, 1/8W 5% 200.0 K 200V CHP THK FLM SMT1206	R421
35	60.9464.2203	1	EA	RES, 1/8W 5% 2.2 K 200V CHP THK FLM SMT1206	R312
36	60.9464.5103	1	EA	RES, 1/8W 5% 5.1 K 200V CHP THK FLM SMT1206	R311
37	60.9464.5603	1	EA	RES, 1/8W 5% 5.6 K 200V CHP THK FLM SMT1206	R413
38	60.9464.6204	1	EA	RES, 1/8W 5% 62.0 K 200V CHP THK FLM SMT1206	R419
39	60.9464.6803	1	EA	RES, 1/8W 5% 6.8 K 200V CHP THK FLM SMT1206	R504
40	62.4000.0102	2	EA	CAP, 1000PF 50V 5% CER CHIP MONO COG	C304, C412

No.	Item	Qty.	UM.	Description	Ref.
41	62.4000.0105	14	EA	CAP, .1UF 50V 20% CER CHIP SUR MT Z5U EIA0805	C306, C307, C309, C402, C405, C406, C408, C414, C415, C416, C424, C504, C507, C508
42	62.4003.0102	6	EA	CAP, 1000PF 50V 10% CER CHIP SUR MT X7R EIA0805	C301, C311, C313, C403, C404, C503
43	62.4003.0103	1	EA	CAP, .01UF 50V 20% CER CHIP SUR MT Z5U EIA0805	C422
44	62.4003.0104	1	EA	CAP, 0.1UF 50V 10% CER CHIP SUR MT X7R EIA0805	C303
45	62.4003.0152	1	EA	CAP, 1500PF 50V 10% CER CHIP SUR MT X7R EIA0805	C312
46	62.4003.0221	1	EA	CAP, 220PF 50V 10% CER CHIP SUR MT X7R 0805	C314
47	62.4003.0222	1	EA	CAP, 2200PF 50V 10% CER CHIP SUR MT X7R EIA0805	C420
48	62.4003.0223	1	EA	CAP, .022UF 50V 10% CER CHIP SUR MT X7R EIA0805	C411
49	62.4003.0331	1	EA	CAP, 330PF 50V 10% CER CHIP SUR MT X7R 0805	C505
50	62.4003.0471	3	EA	CAP, 470PF 50V 10% CER CHIP SUR MT X7R 0805	C305, C409, C417
51	62.4005.0101	5	EA	CAP, 100PF 50V 10% CER CHIP SUR MT COG 0805	C410, C418, C419, C423, C502
52	62.4005.0220	1	EA	CAP, 22PF 50V 10% CER CHIP SUR MT COG 0805	C501
53	62.4007.0474	3	EA	CAP, .47UF 50V 20% CER CHIP SUR MT Z5U 1210	C302, C310, C315
54	62.4223.0475	6	EA	CAP, 4.7UF 50V ALUM ELECTRO SUR MT LOW ESR	C308, C401, C407, C413, C421, C506
55	80.2650.0001	3	EA	TRANSISTOR, MMBT4401LT1 NPN 40V 600MA SOT-23	Q301, Q501, Q503
56	80.2651.0001	2	EA	TRANSISTOR, MMBT4403LT1 PNP 40V 600MA SOT-23	Q302, Q502
57	82.4327.0001	5	EA	DIODE, 1N5819M RECTIFIER GLASS MELF	D301, D302, D303, D402, D403
58	82.5346.0001	6	EA	DIODE, LL4148 SMALL SIGNAL	D401, D404-D407, D501
59	82.5355.0001	1	EA	DIODE, ZM4733A ZENER REGULATOR 5.1V 1W SMT DO-213AB	D504
60	82.5356.0001	3	EA	DIODE, ZMM5240B ZENER REGULATOR 10V .5W SMT SOD-80C	D305-D307

No.	Item	Qty.	UM.	Description	Ref.
61	82.5358.0001	1	EA	DIODE, ZM4747A ZENER REGULATOR 20V 1W SMT DO-213AB	D304
62	83.3201.0001	2	EA	IC, LM293D LOW OFFSET VOLTAGE DUAL COMPARATORS SO-8	U302, U403
63	83.3202.0001	2	EA	IC, LM258D DUAL DIFFERENTIAL INPUT LOW POWER OP-AMPS SO-8	U402, U404
64	84.4320.0001	1	EA	IC, MC14040BD 12-BIT BINARY COUNTER SOIC-16	U501
65	84.7431.0001	1	EA	IC, MC14013BD DUAL TYPE D FLIP-FLOP SOIC-14	U502
66	85.5169.0001	1	EA	IC, UCC2810DW DUAL CH SYNCH CURRENT MODE PWM SOIC-16	U401
67	85.5170.0001	1	EA	IC, UC2855BDW POWER FACTOR PRE-REGULATOR SOIC-20	U301

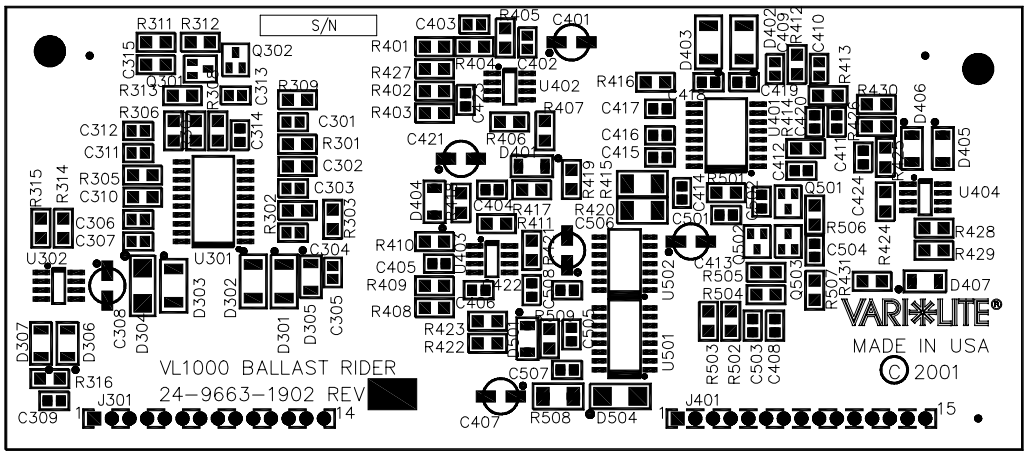


Figure 3-71: 625W Ballast Rider PCB

575W Ballast I/O Cable Assembly

25.9663.1907 Rev B

Refer to Figure 3-72.

No.	Item	Qty.	UM.	Description
1	52.6231.0001	1	EA	PLUG HOUSING, MNLOK PLUG 3POS
2	52.6396.2204	1	EA	RECEPT, 4POS MTA100 W/POL TAB RED CLSD END
3	52.6400.0111	1	EA	RECEPT, 17-9 STD SEX CPC 600V KEY A SQ FLANGE
4	52.8201.0005	3	EA	PIN, GOLD 24-20AWG TYPE3+ REEL .040-.080 INS DIA
5	52.8202.0001	5	EA	PIN, GOLD 18-16AWG TYPE 3+ REEL .080-.100 INS DIA
6	52.8202.0011	1	EA	PIN, GND GOLD 18-16AWG TYPE 3+ REEL .080-.100 INS DIA
7	52.8231.0005	3	EA	TERM, RING #6 BLUE 16-14 AWG REEL PIDG
8	52.8257.0002	2	EA	PIN, PHOS BRZ 20-14AWG (REEL) MNLOK .060"- .130"INS DIA
9	52.8313.0001	2	EA	RCPT, FASTON 1/4" 18-14 AWG FLAG DBL CRP (REEL)
10	52.8314.0001	1	EA	PIN, GND 20-14AWG (REEL) MNLOK .060"- .130"INS DIA
11	55.2186.0001	5	EA	CABLE TIE, .10"WD 4.00"LG SMALL
12	55.2199.1500	.19	FT	HEATSHRINK, 1 1/2" BLACK
13	67.4018.0001	1	EA	FERRITE, 26 X 28.5 X 13MM, CYLINDRICAL CORE
14	73.3522.0002	0.25	FT	WIRE, 22AWG 300V 105C PVC RED UL1569
15	73.3522.0009	0.25	FT	WIRE, 22AWG 300V 105C PVC WHT UL1569
16	73.3522.0010	0.25	FT	WIRE, 22AWG 300V 105C PVC BLK UL1569
17	73.6016.0003	2.19	FT	WIRE, 16AWG 600V 105C PVC ORG UL1015
18	73.6016.0007	2.02	FT	WIRE, 16AWG 600V 105C PVC VIO UL1015
19	73.6016.0009	0.50	FT	WIRE, 16AWG 600V 105C PVC WHT UL1015
20	73.6016.0010	0.50	FT	WIRE, 16AWG 600V 105C PVC BLK UL1015
21	73.6016.0504	1.33	FT	WIRE, 16AWG 600V 105C PVC GRN/YEL UL1015

575W Ballast I/O Cable Assembly (continued)

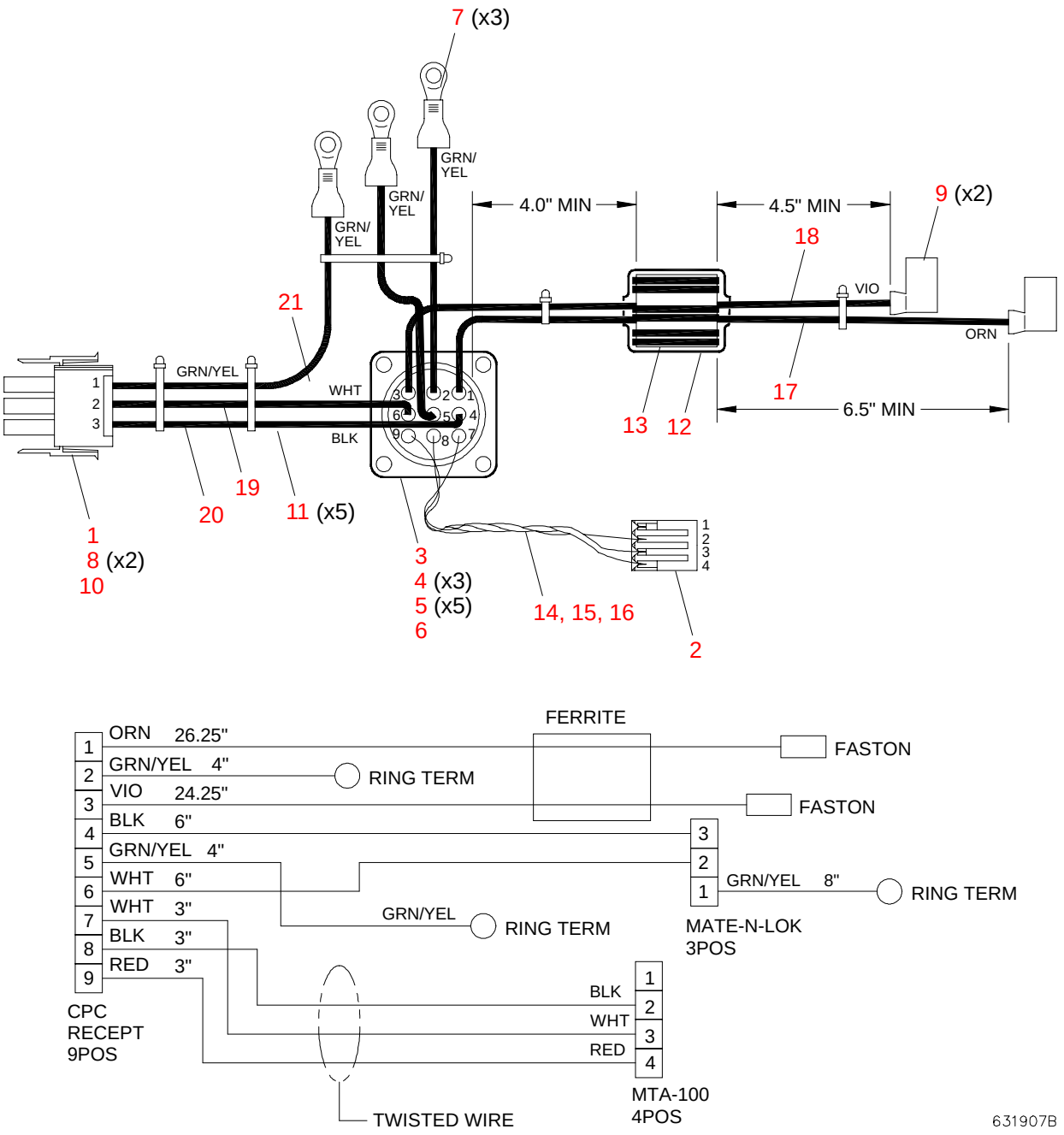


Figure 3-72: 575W Ballast I/O Cable Assembly

Notes

APPENDIX A.

Technical Bulletins

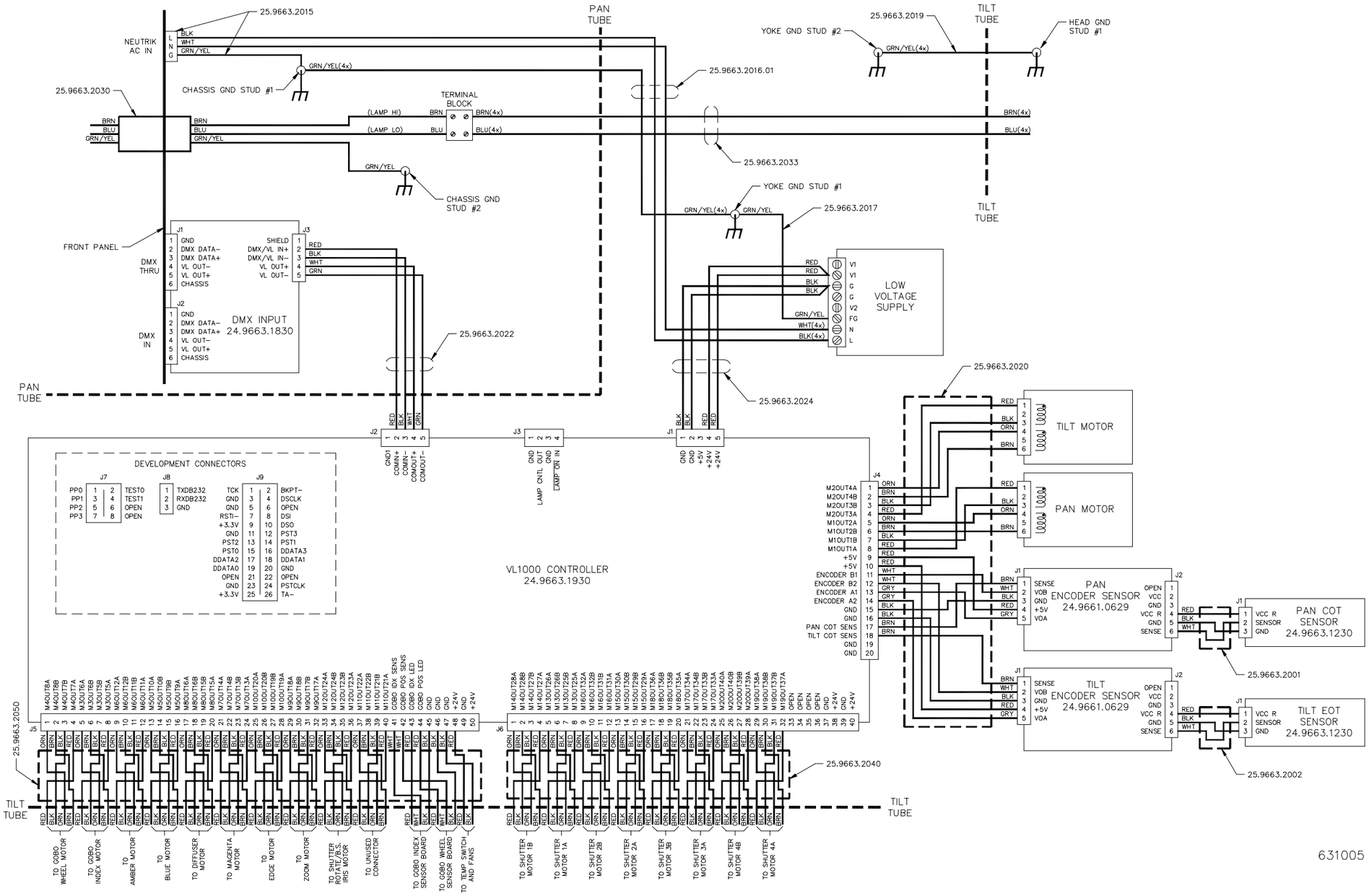
VL1000 ERS Luminaire Technical Bulletins

The following table identifies the current technical bulletins associated with the VL1000 ERS luminaire. These improvements have been incorporated into this manual.

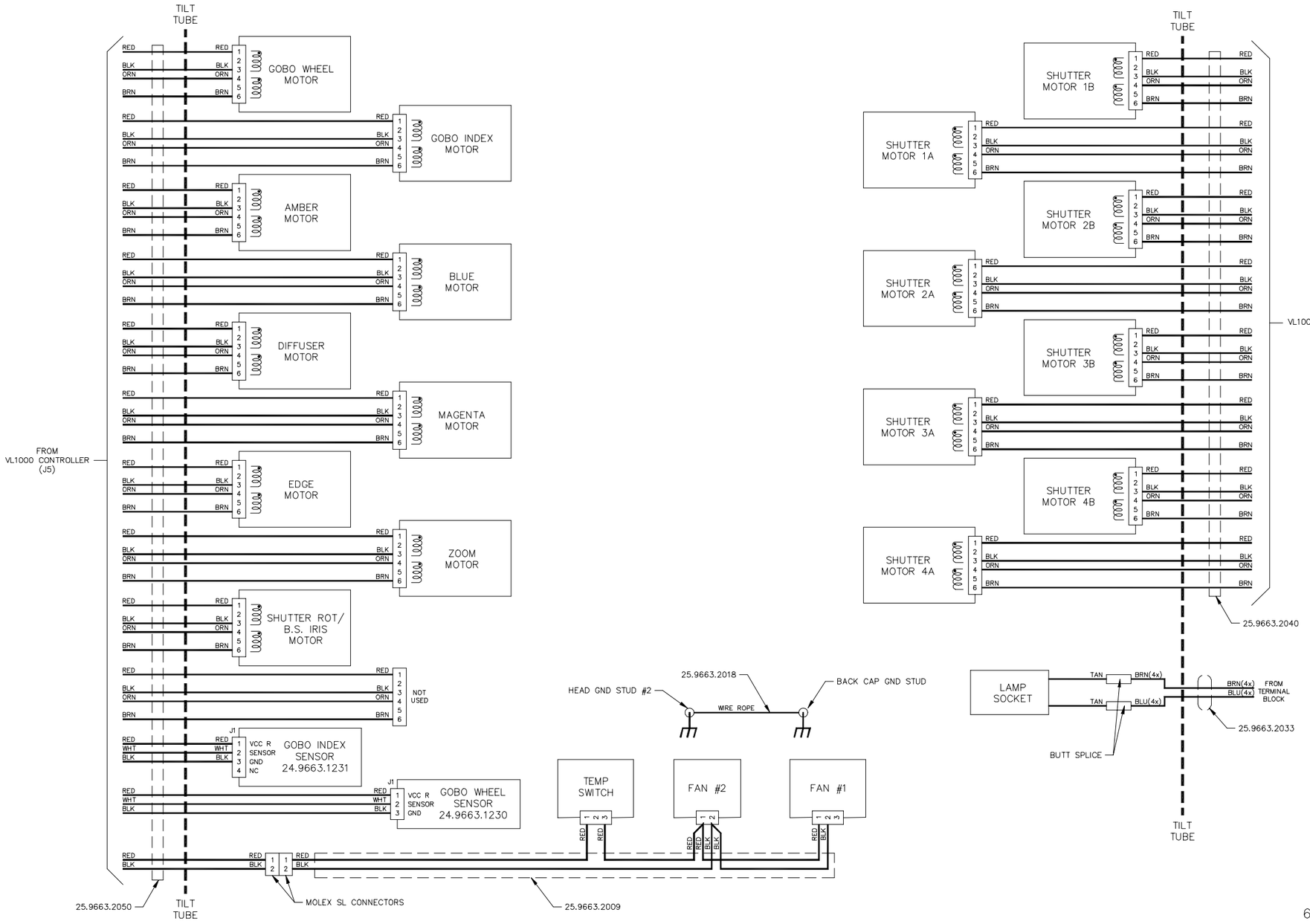
Technical Bulletin	Description
S1K-001	VL1000 Tilt Bearing Hardware Check/Modification
S1K-002	VL1000 Lamp Wire Sleeving Modification
S1K-003	VL1000 Arc Luminaire IR Coated Glass Retrofit

Notes

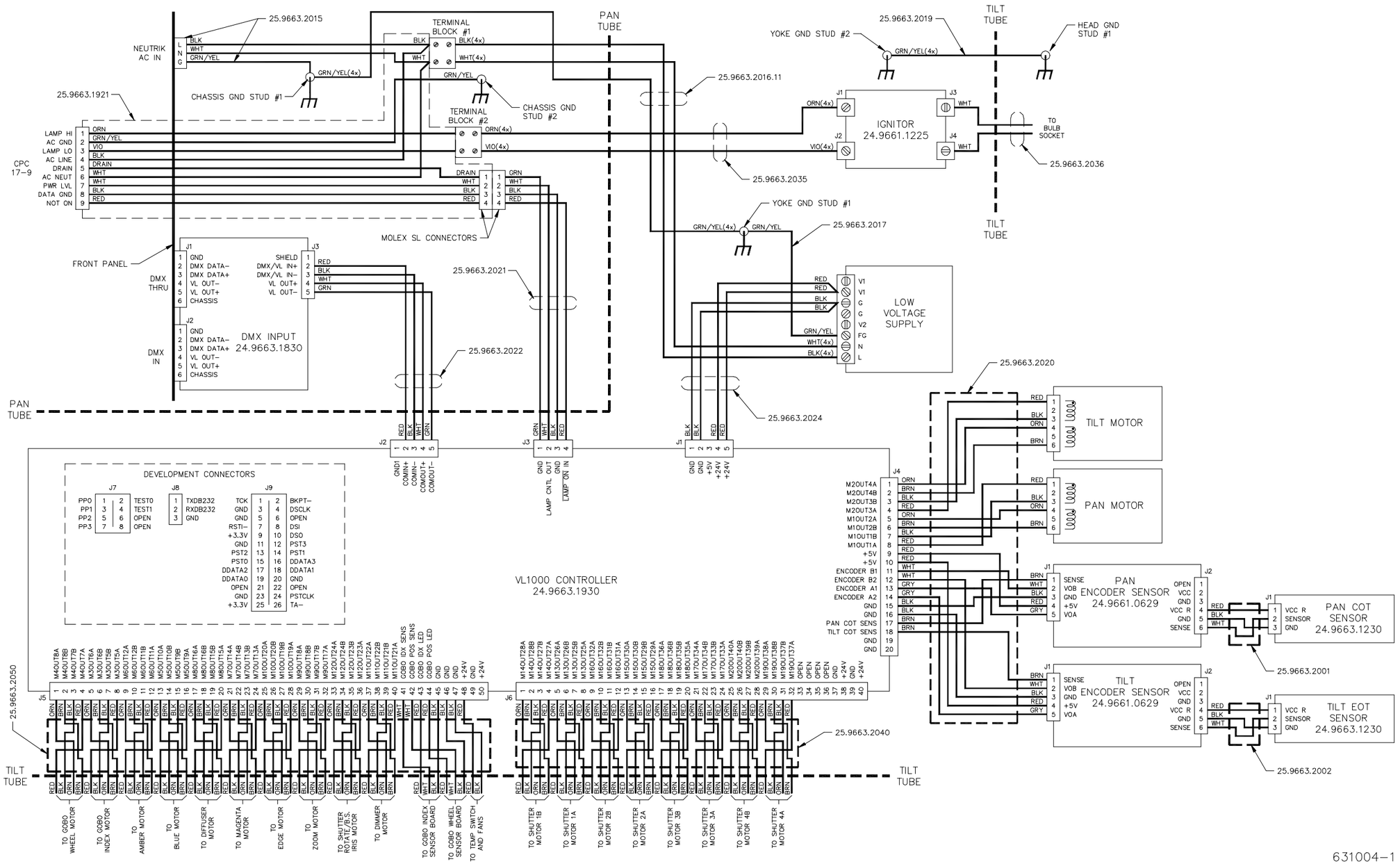
VL1000 Incandescent Wiring Diagram - Sheet 1 of 2



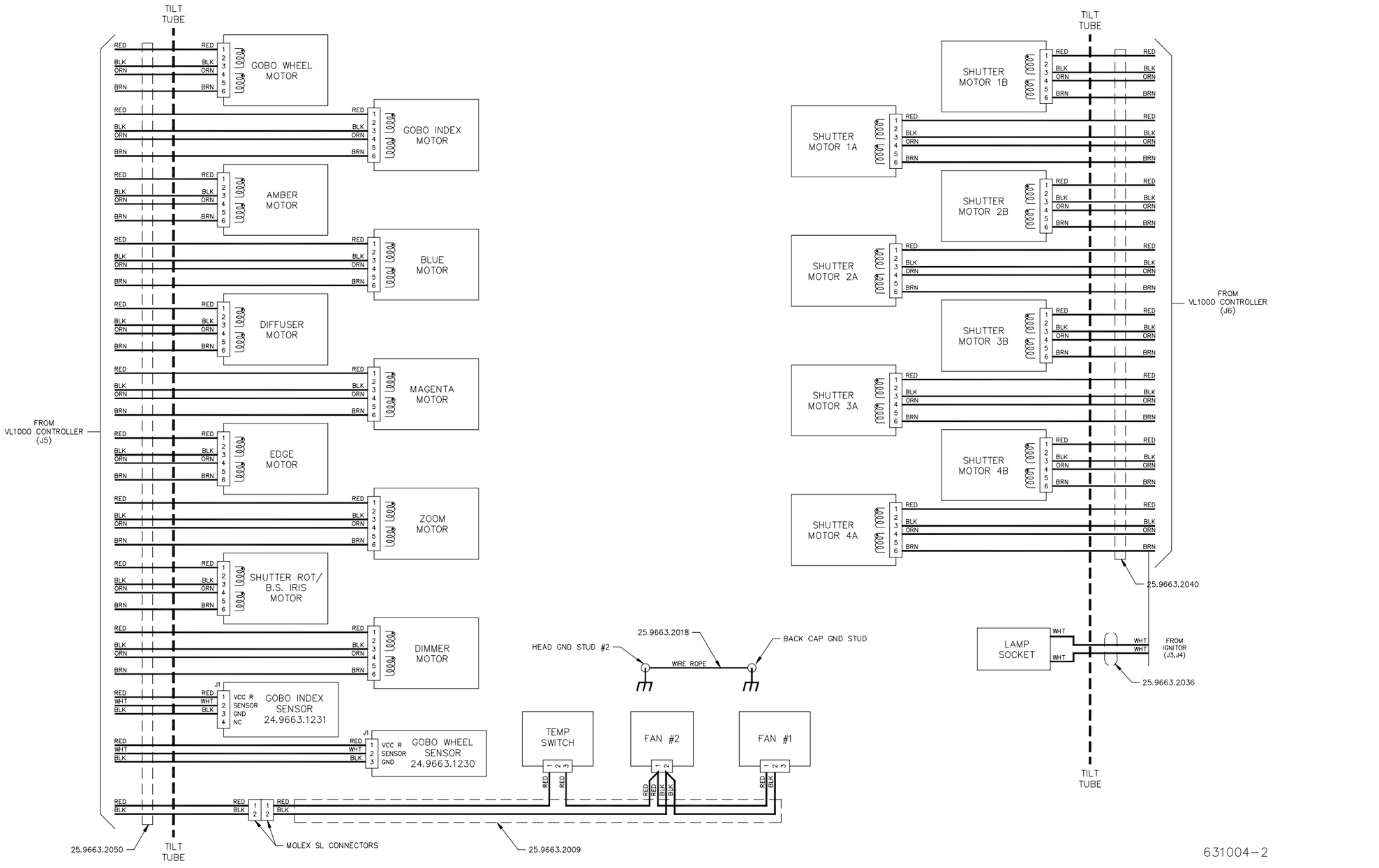
VL1000 Incandescent Wiring Diagram - Sheet 2 of 2



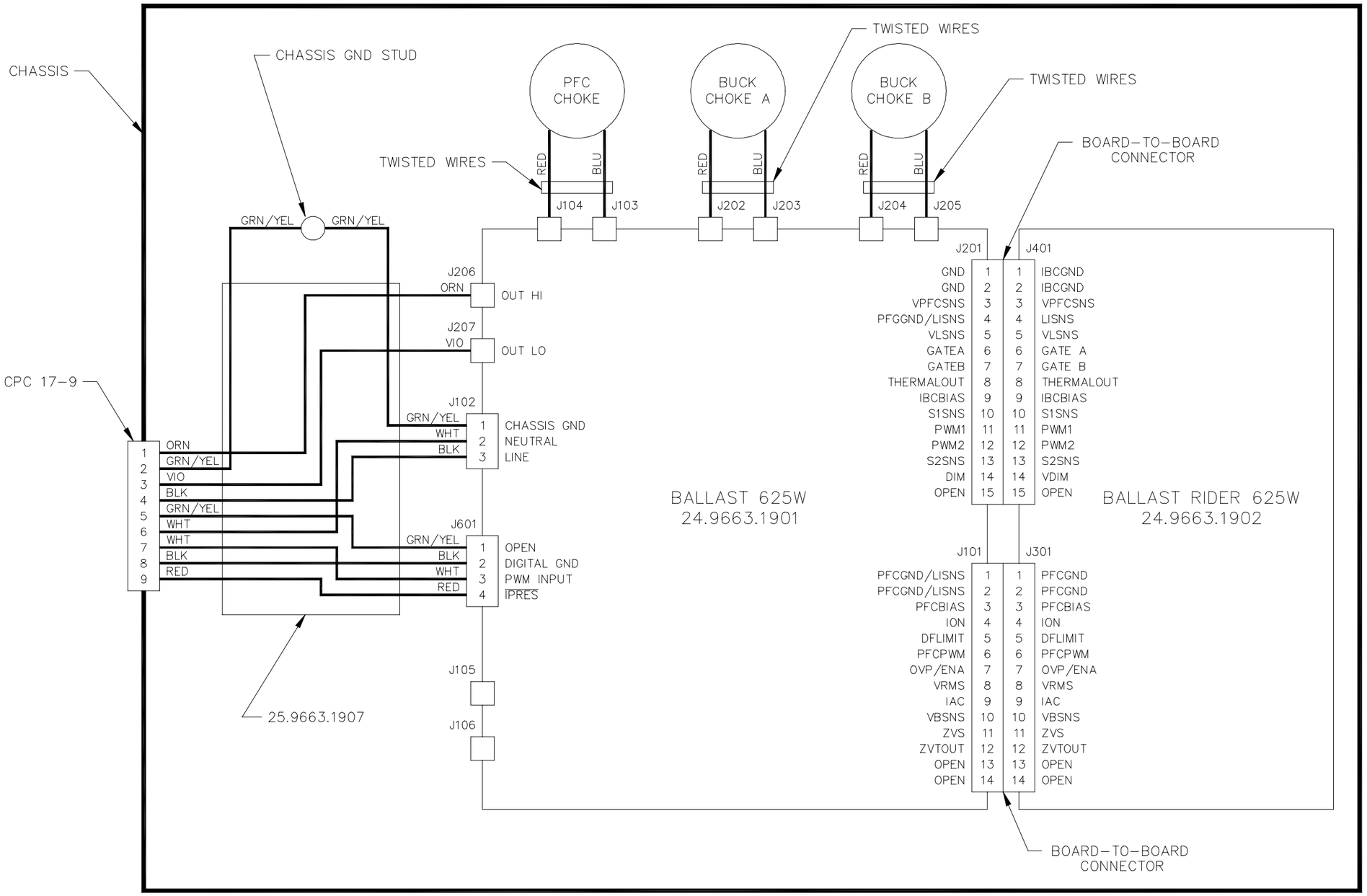
VL1000 Arc Wiring Diagram - Sheet 1 of 2



VL1000 Arc Wiring Diagram - Sheet 2 of 2

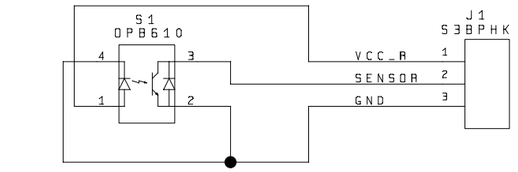


VL1000 Ballast Wiring Diagram



Gobo Wheel Sensor (24.9663.1230 B) Schematic

REVISIONS			
REV	DESCRIPTION	DATE	APPD
A	RLSE TO PRODUCTION ECO 8894	11/08/01	MTD
B	REVISED PER ECO 6449		



MTG1 ←

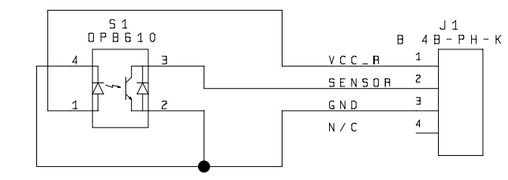
MTG2 ←

Filename:
Date/Time:

NEXT ASSY	24–9663–1230	DRAWN BY MARC DYBLE	VARI∗LITE® 201 REGAL ROW DALLAS, TEXAS 75247
PCB NO.		DSN MARC DYBLE	GOBO WHEEL SENSOR
CONFIDENTIAL ALL INFORMATION CONTAINED HEREIN IS THE SOLE AND EXCLUSIVE PROPERTY OF VARI–LITE, INC. AND MAY NOT BE USED, DISCLOSED, OR REPRODUCED IN ANY MANNER WITHOUT, THE ADVANCE WRITTEN CONSENT OF VARI–LITE, INC.		CHK DOC MFG ViewDraw for Windows 7.5	SIZE B · REVISION B · DRAWING NUMBER 14–9663–1230 · SHEET 1 OF 1

Gobo Index Sensor (24.9663.1231 A) Schematic

REVISIONS			
REV	DESCRIPTION	DATE	APPD
A	RLSE TO PRODUCTION ECO 8894	11/08/01	MTD

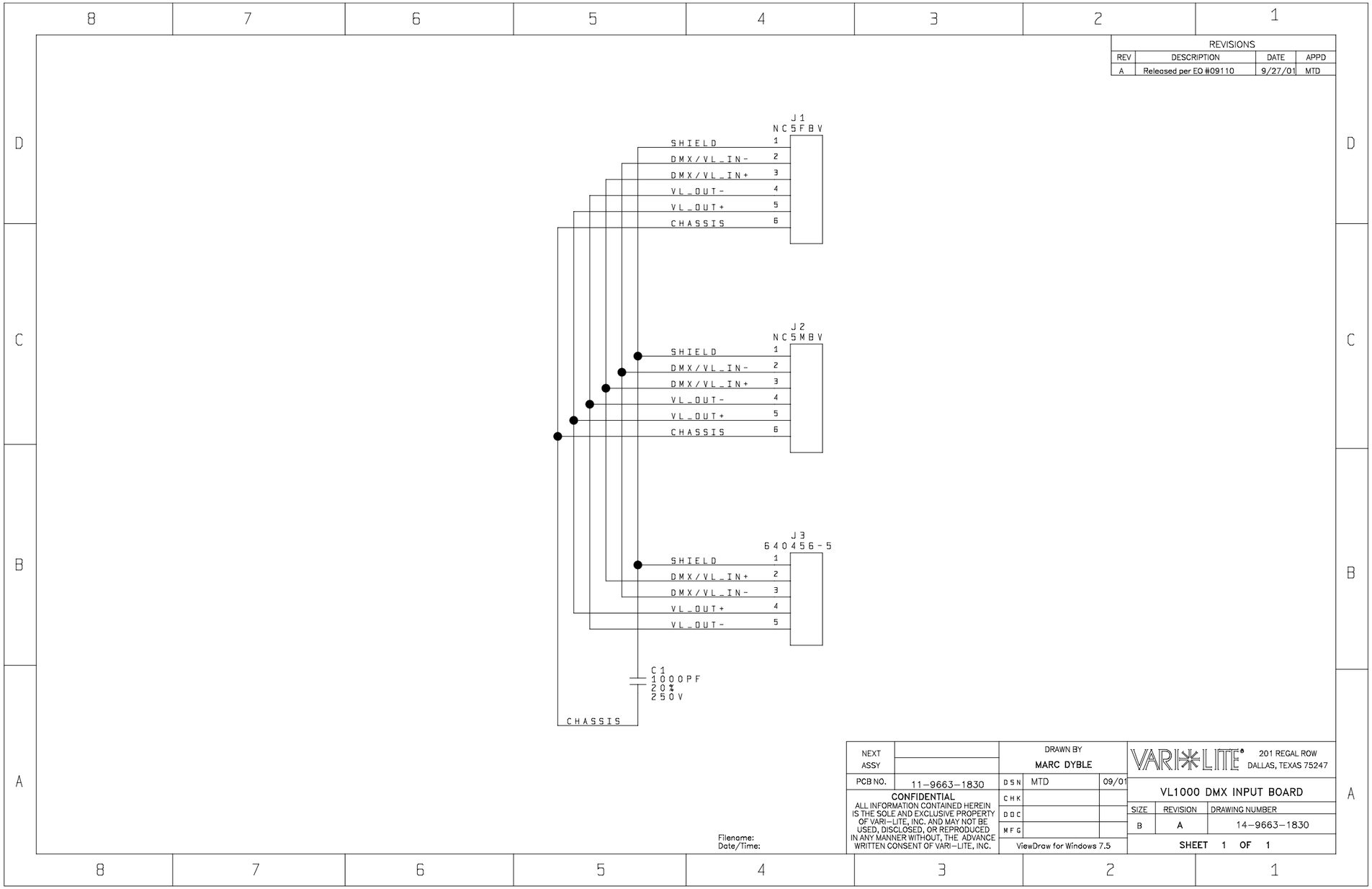


MTG1
MTG2

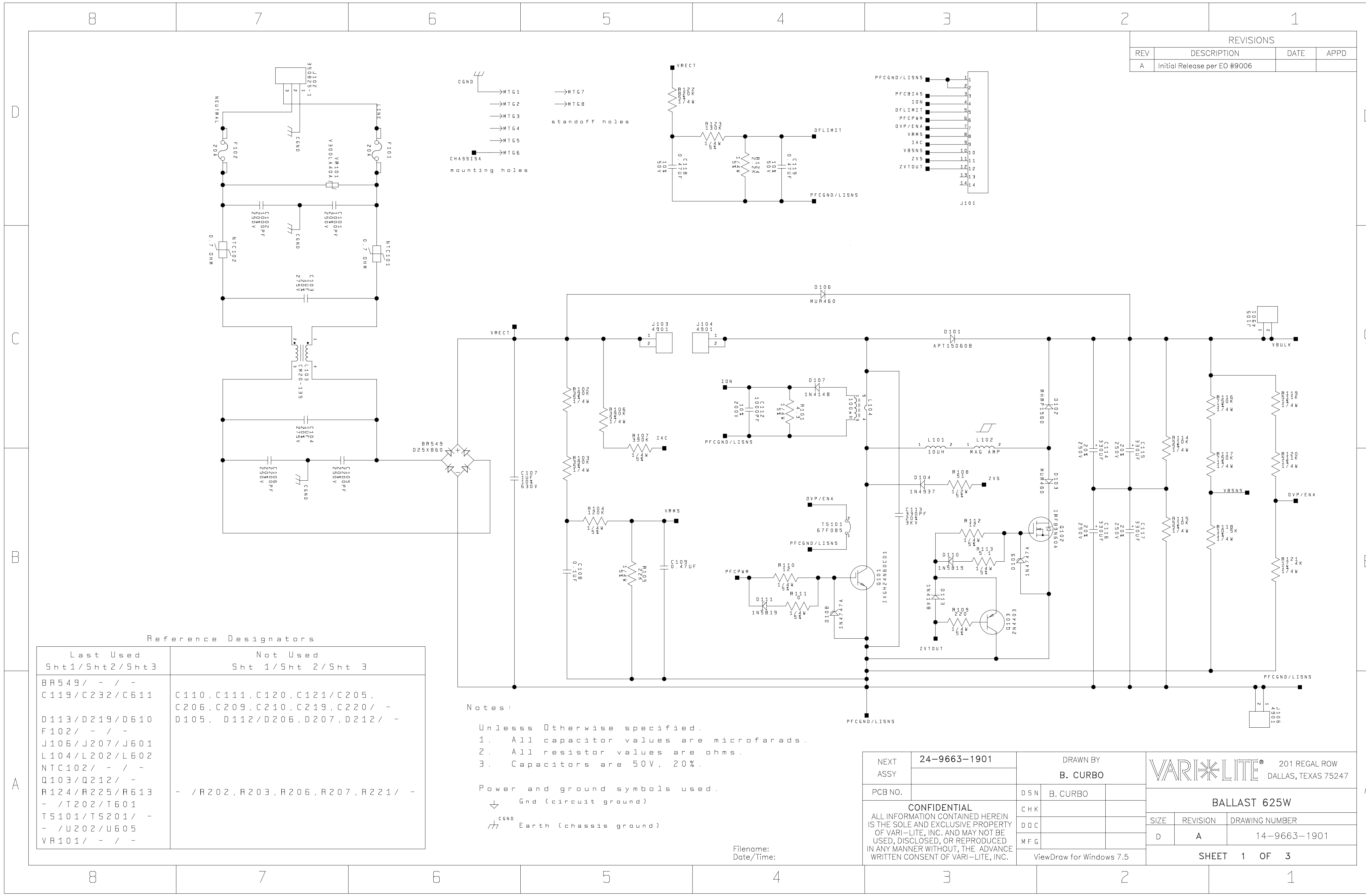
Filename:
Date/Time:

NEXT ASSY		DRAWN BY MARC DYBLE	VARI∗LITE® 201 REGAL ROW DALLAS, TEXAS 75247
PCB NO.		DSN	GOBO INDEX SENSOR
CONFIDENTIAL ALL INFORMATION CONTAINED HEREIN IS THE SOLE AND EXCLUSIVE PROPERTY OF VARI-LITE, INC. AND MAY NOT BE USED, DISCLOSED, OR REPRODUCED IN ANY MANNER WITHOUT, THE ADVANCE WRITTEN CONSENT OF VARI-LITE, INC.		CHK	SIZE: B · REVISION: A · DRAWING NUMBER: 14-9663-1231
		DOC	
		MFG	SHEET 1 OF 1
		ViewDraw for Windows 7.5	

DMX Input PCB (24.9663.1830 A) Schematic



625W Ballast PCB (24.9663.1901 A) Schematic - Sheet 1 of 3


REVISIONS
REV | DESCRIPTION | DATE | APPD
A | Initial Release per EO #9006
J102 350825-1
NEUTRAL
LINE
F102 20A
F101 20A
CGND
VR101 V300LA40A
C102 1000PF 20% 250V
C101 1000PF 20% 250V
NTC102 0.7 OHM
NTC101 0.7 OHM
C103 1UF 20% 275V
L103 CM20-135
C104 1UF 20% 275V
C106 2200PF 20% 250V
C105 2200PF 20% 250V
BR549 D25XB60
MTG1
MTG2
MTG3
MTG4
MTG5
MTG6
MTG7
MTG8
standoff holes
CHASSISA
mounting holes
VRECT
R122 820K 5% 1/4W
R123 130K 1/4W 5%
DFLIMIT
C118 0.47UF 10% 50V
R124 2.2K 1/4W 5%
C119 0.47UF 10% 50V
PFCGND/LISNS
PFCBIAS
ION
PFCPWM
OVP/ENA
VRMS
IAC
VBSNS
ZVS
ZVTOUT
J101
D106 MUR460
J103 4901
J104 4901
D101 APT15D60B
J105 4901
VBULK
C107 1UF 10% 630V
R102 390K 5% 1/4W
R106 390K 5% 1/4W
R107 390K 1/4W 5%
R103 390K 5% 1/4W
R104 120K 1/4W 5%
C108 0.1UF
R105 22K 1/4W 5%
C109 0.47UF
C112 1000PF 10% 200V
R101 4.3 1/4W 5%
D107 1N4148
L104 100mH
D102 RHRP1560
L101 10UH
L102 MAG AMP
D103 MUR460
D104 1N4937
R108 51 1/2W 5%
C113 330PF 20% 3KV
TS101 67F085
R112 12 1/4W 5%
R113 5.1 1/4W 5%
Q102 IRFB9N60A
D110 1N5819
D109 1N4747A
R110 12 1/4W 5%
R111 0 1/4W 5%
D111 1N5819
D108 1N4747A
Q101 IXGH24N60CD1
D113 1N4148
R109 220 1/4W 5%
Q103 2N4403
C114 330UF 20% 250V
C115 330UF 20% 250V
C116 330UF 20% 250V
C117 330UF 20% 250V
R114 510K 5% 1/4W
R115 510K 5% 1/4W
R116 750K 1% 1/4W
R117 750K 1% 1/4W
R118 10.5K 1% 1/4W
R119 511K 1% 1/4W
R120 511K 1% 1/4W
R121 17.4K 1% 1/4W
J106 4901
Reference Designators
Last Used Sht1/Sht2/Sht3 | Not Used Sht 1/Sht 2/Sht 3
BR549/ - / -
C119/C232/C611 | C110,C111,C120,C121/C205, C206,C209,C210,C219,C220/ -
D113/D219/D610 | D105, D112/D206,D207,D212/ -
F102/ - / -
J106/J207/J601
L104/L202/L602
NTC102/ - / -
Q103/Q212/ -
R124/R225/R613 | - /R202,R203,R206,R207,R221/ -
- /T202/T601
TS101/TS201/ -
- /U202/U605
VR101/ - / -
Notes:
Unlesss Otherwise specified.
1. All capacitor values are microfarads.
2. All resistor values are ohms.
3. Capacitors are 50V, 20%.
Power and ground symbols used.
Gnd (circuit ground)
CGND Earth (chassis ground)
Filename:
Date/Time:
NEXT ASSY 24-9663-1901
PCB NO.
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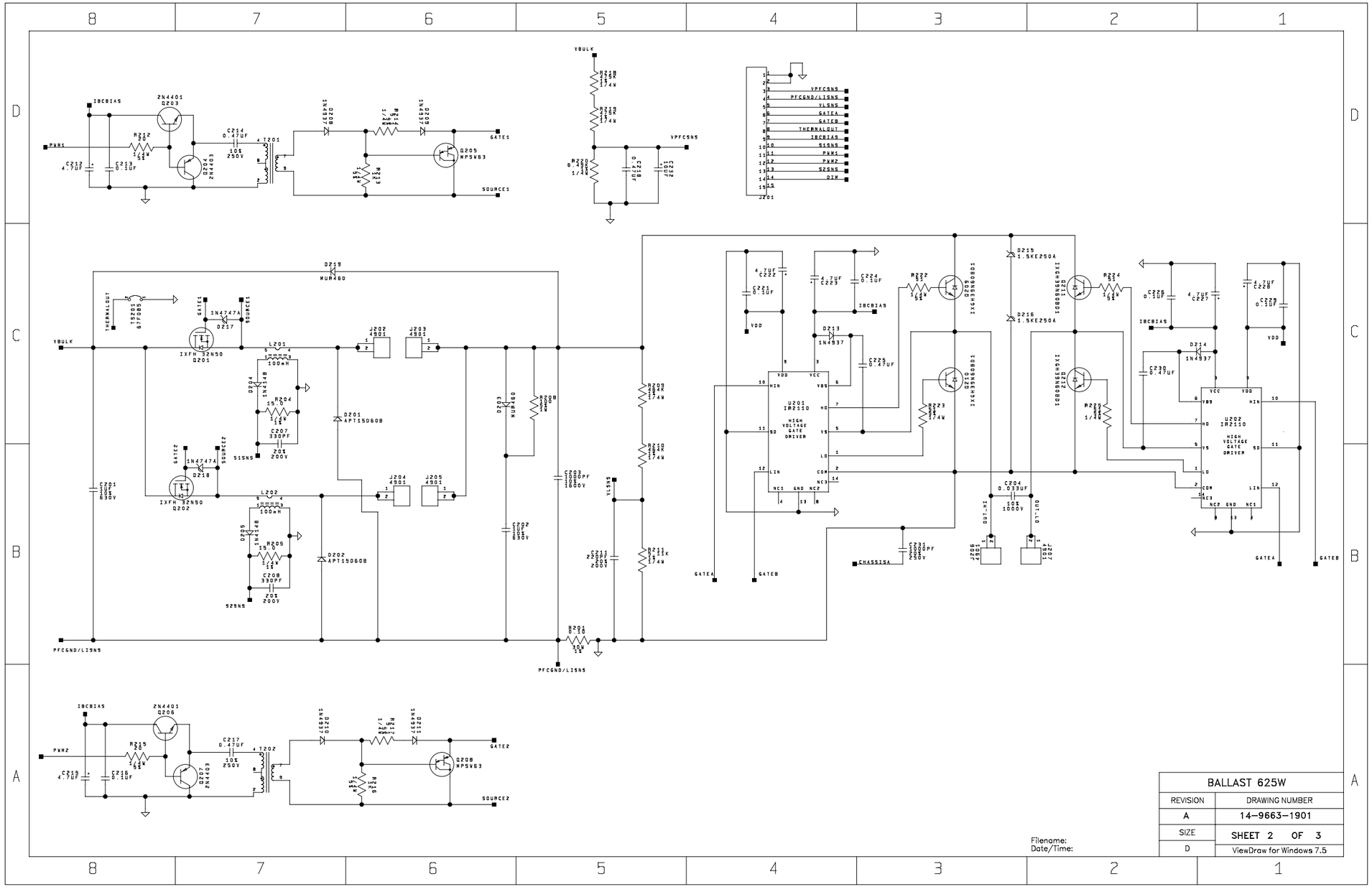
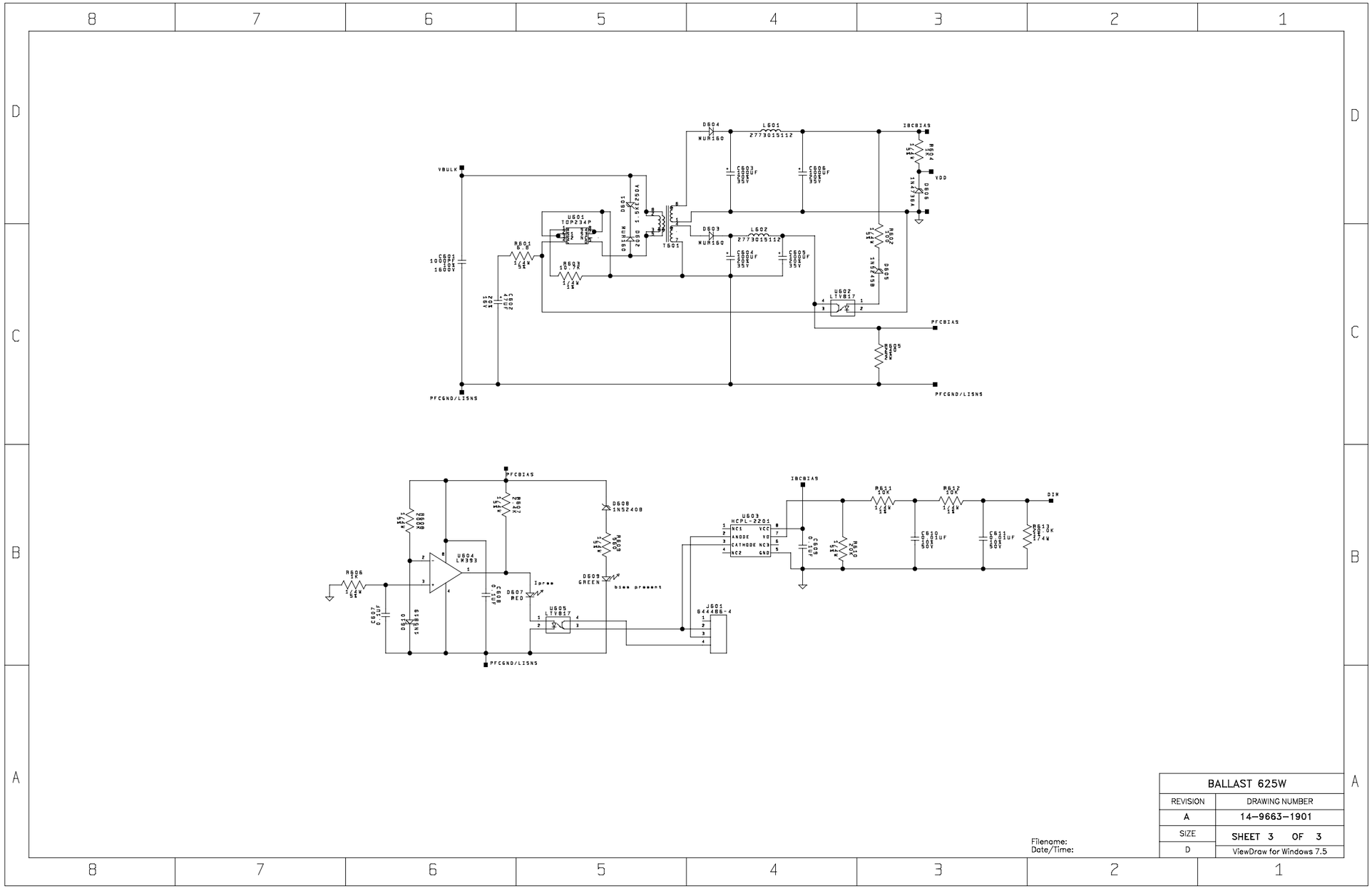
DRAWN BY B. CURBO
DSN B. CURBO
CHK
DOC
MFG
ViewDraw for Windows 7.5
201 REGAL ROW DALLAS, TEXAS 75247
BALLAST 625W
SIZE D
REVISION A
DRAWING NUMBER 14-9663-1901
SHEET 1 OF 3

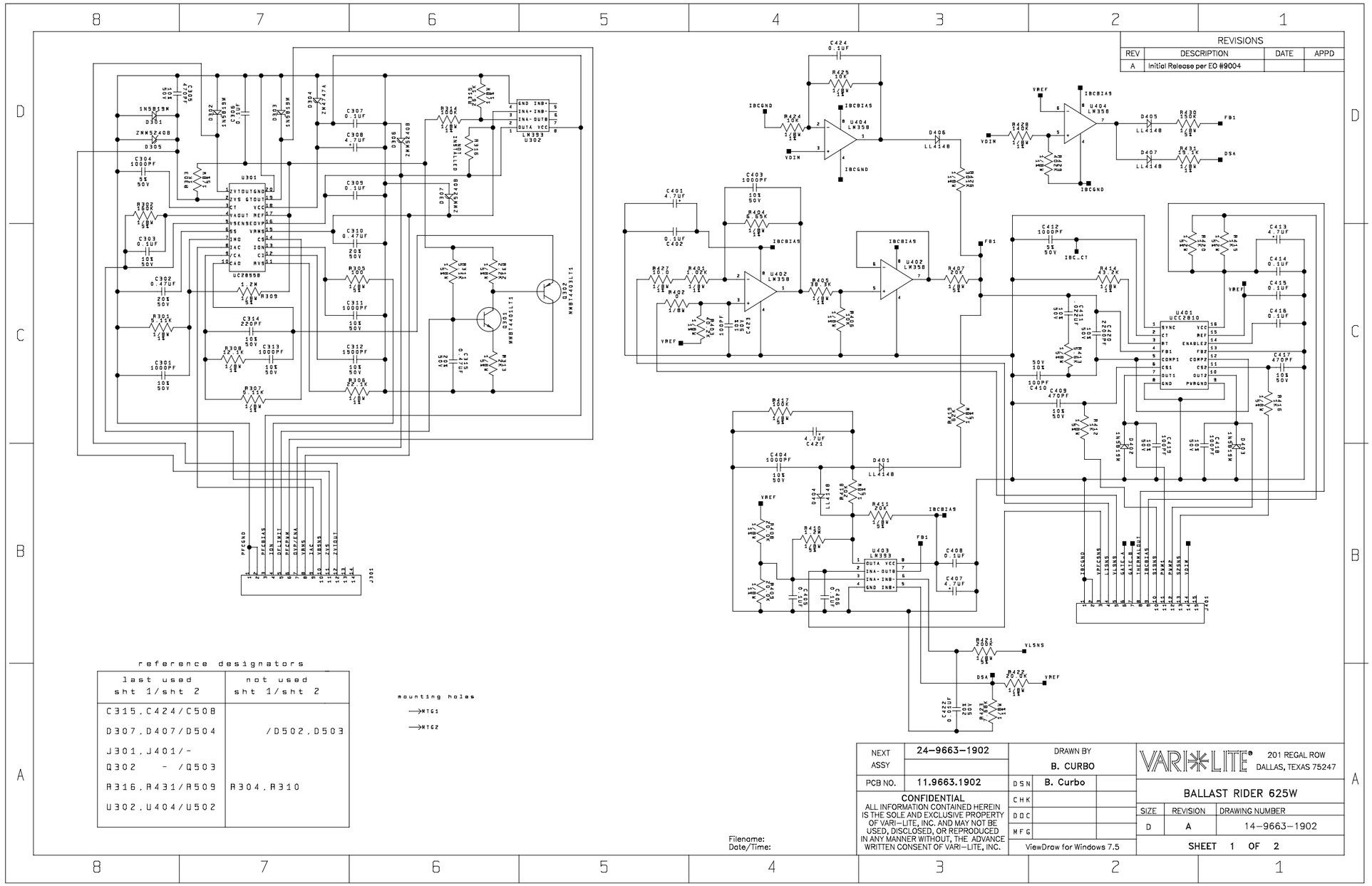
625W Ballast PCB (24.9663.1901 A) Schematic - Sheet 2 of 3



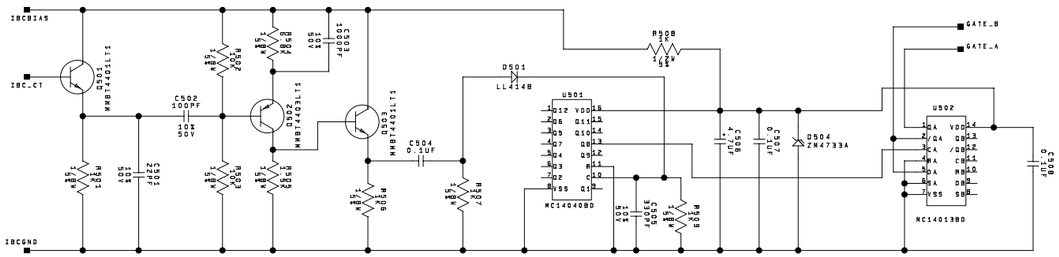
625W Ballast PCB (24.9663.1901 A) Schematic - Sheet 3 of 3



625W Ballast Rider PCB (24.9663.1902 A) Schematic - Sheet 1 of 2



625W Ballast Rider PCB (24.9663.1902 A) Schematic - Sheet 2 of 2



BALLAST RIDER 625W	
REVISION	DRAWING NUMBER
A	14–9663–1902
SIZE	SHEET 2 OF 2
D	ViewDraw for Windows 7.5

Filename:
Date/Time:

Controller PCB (24.9663.1930 F) Schematic - Sheet 1 of 10

REVISIONS			
REV	DESCRIPTION	DATE	APPD
A	Initial Release per EO #9003	12/01	T.E.W.
B	Revised per EO #09010	01/02	T.E.W.
C	Revised per EO #09013	01/02	T.E.W.
D	Revised per EO #09021	02/02	T.E.W.
E	Revised per EO #09025	02/02	T.E.W.
F	Revised per EO #09028		

Notes:

Unlesss Otherwise specified.
1. All capacitor values are microfarads.
2. All resistor values are ohms.
3. Capacitors are 50V, 20%.
4. Resistors are 1/10W 5%.

Power and ground symbols used.

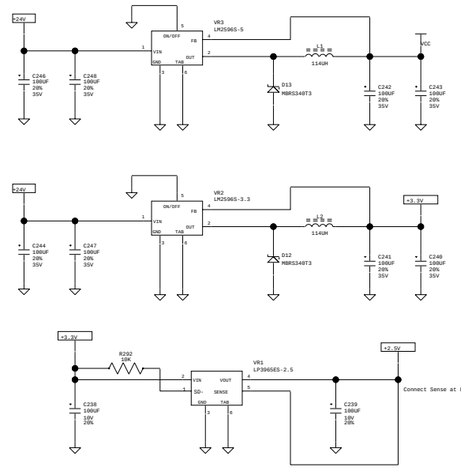
Vcc (+5V Logic power)

Vee (-5V Logic power)

Gnd (Logic ground)

Reference Designators

Last Used	Not Used
C248	
D48	
FB2	
J9	
L2	
PTC4	
R306	
S5	
U40	
VR3	
Y1	
Z4	



NEXT ASSY	24.9663.1930	DRAWN BY	T. WALSH
PCB NO.	11.9663.1930	DSN	
		CHK	
		DOC	
		MFG	

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VARI*LITE® 201 REGAL ROW DALLAS, TEXAS 75247

VL1000 CONTROLLER

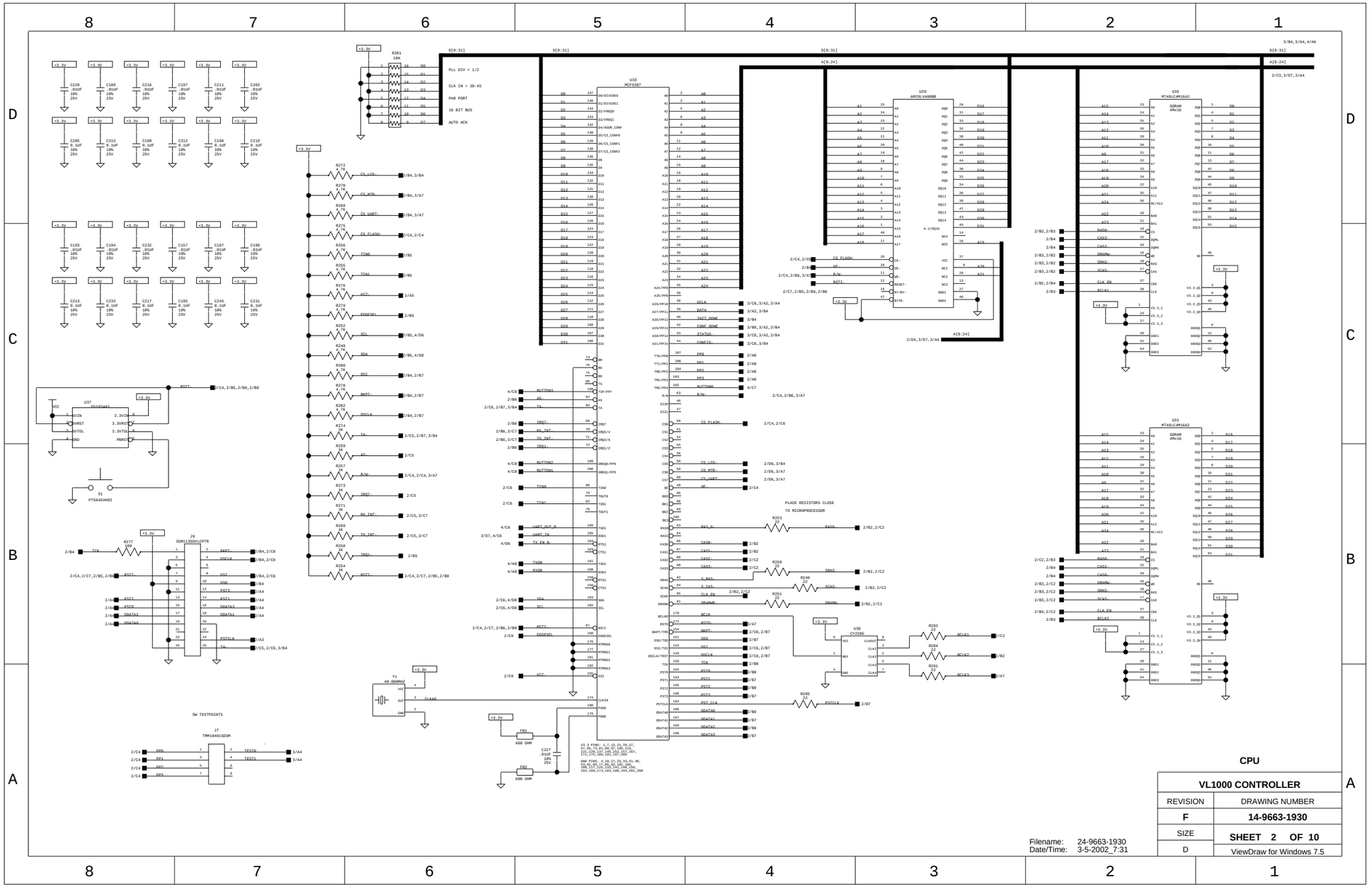
SIZE	REVISION	DRAWING NUMBER
D	**F**	**14-9663-1930**

Filename: 24-9663-1930
Date/Time: 3-5-2002_7:31

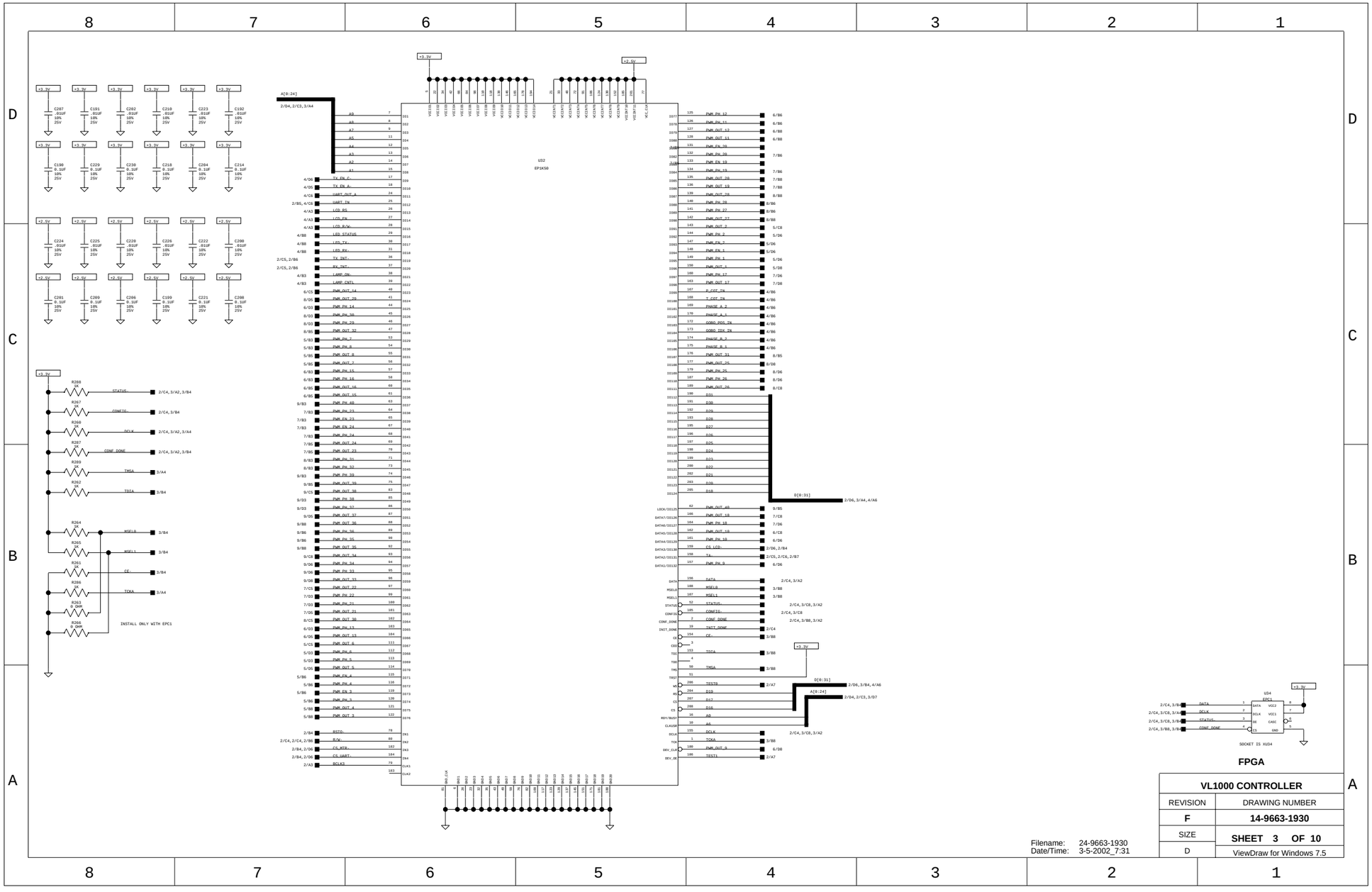
ViewDraw for Windows 7.5

SHEET 1 OF 10

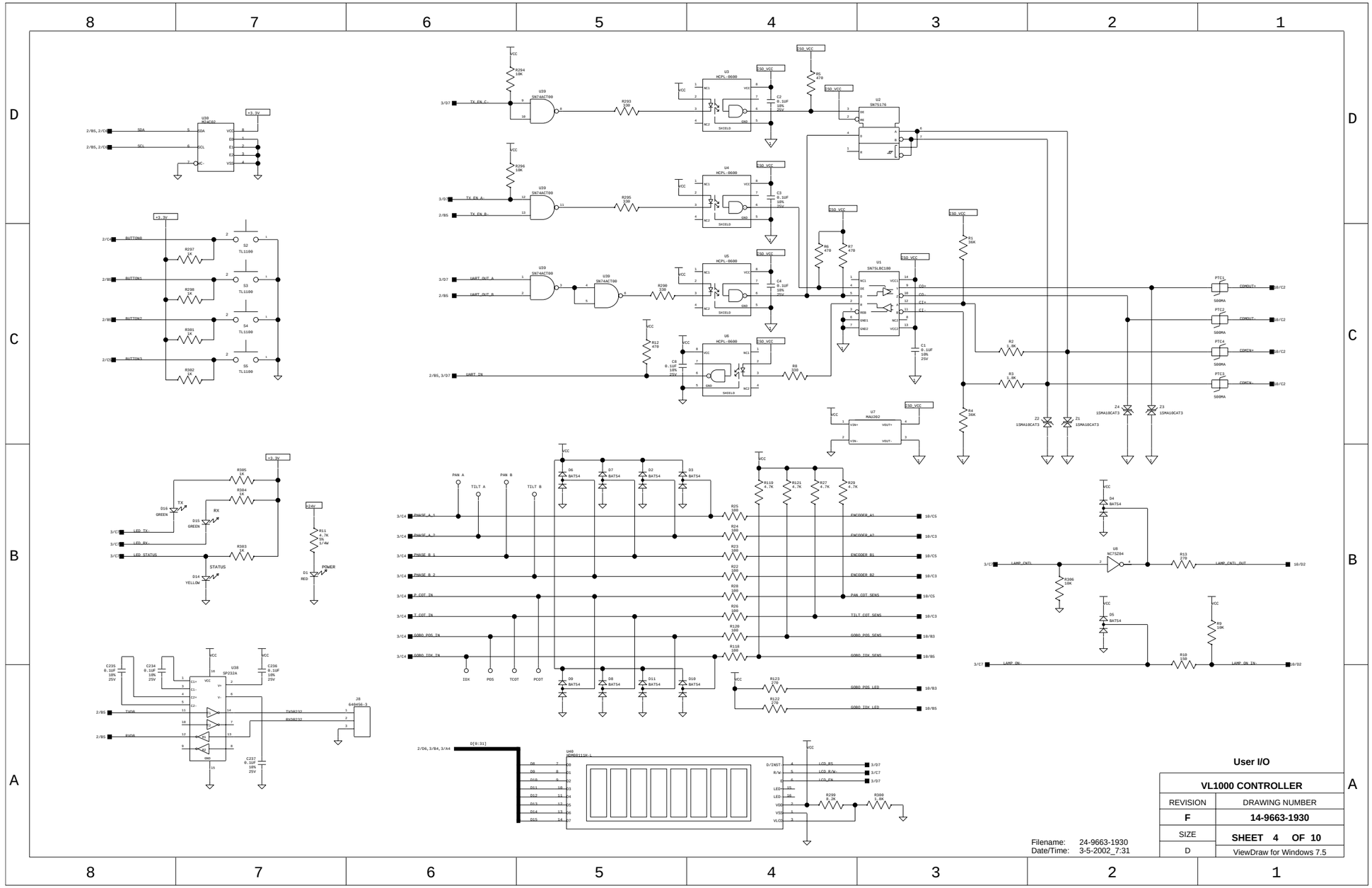
Controller PCB (24.9663.1930 F) Schematic - Sheet 2 of 10



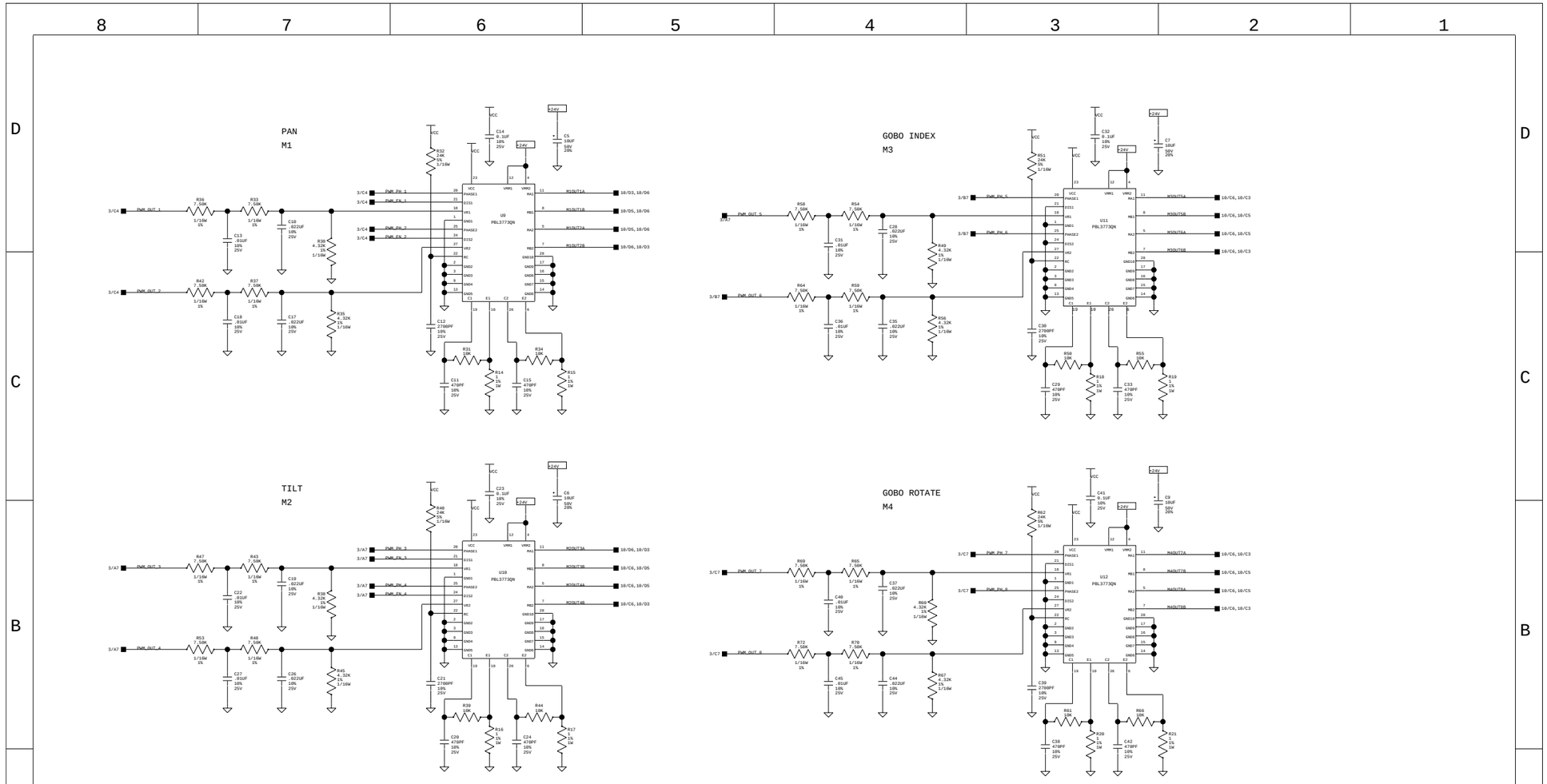
Controller PCB (24.9663.1930 F) Schematic - Sheet 3 of 10



Controller PCB (24.9663.1930 F) Schematic - Sheet 4 of 10



Controller PCB (24.9663.1930 F) Schematic - Sheet 5 of 10

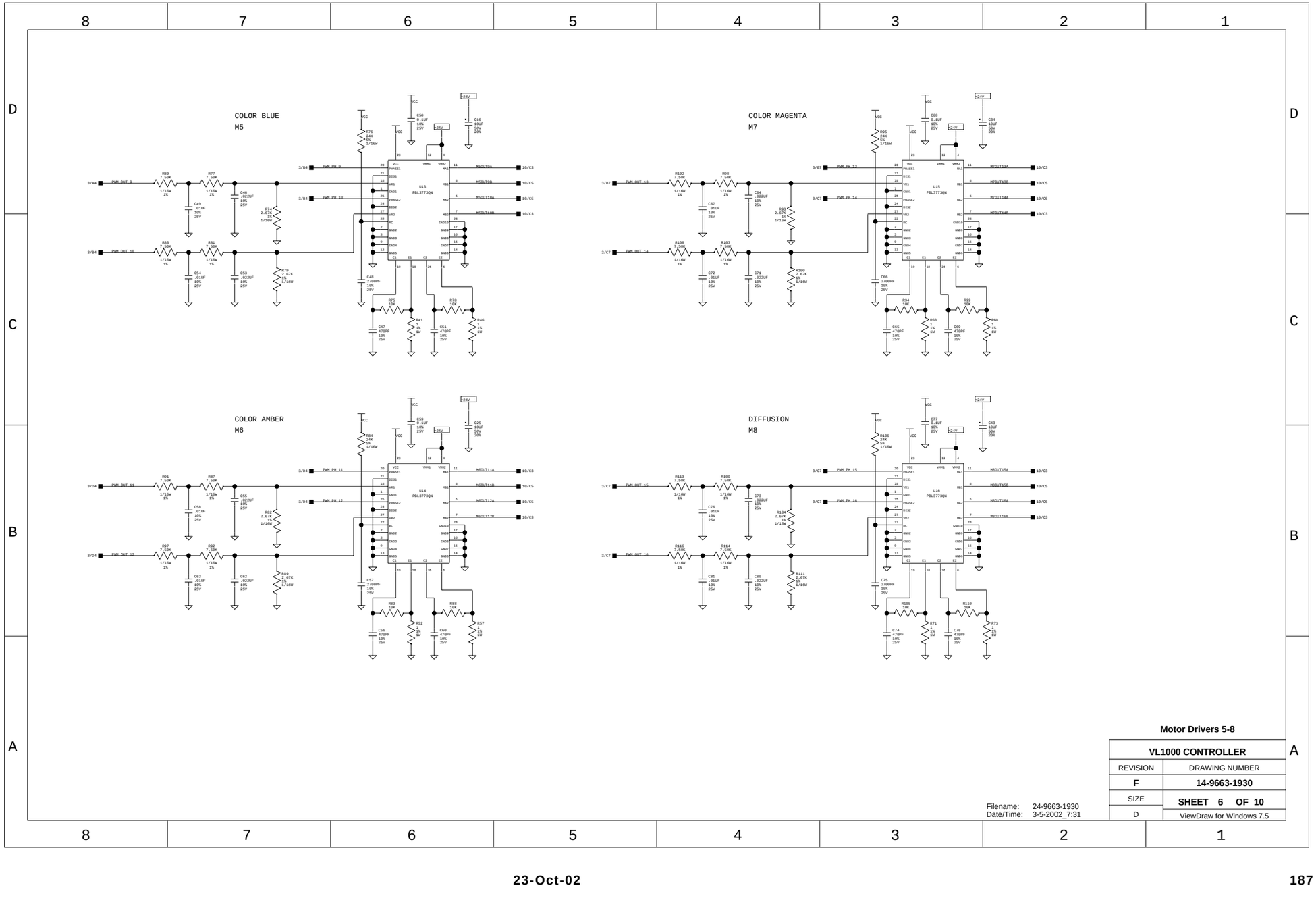


Motor Drivers 1-4

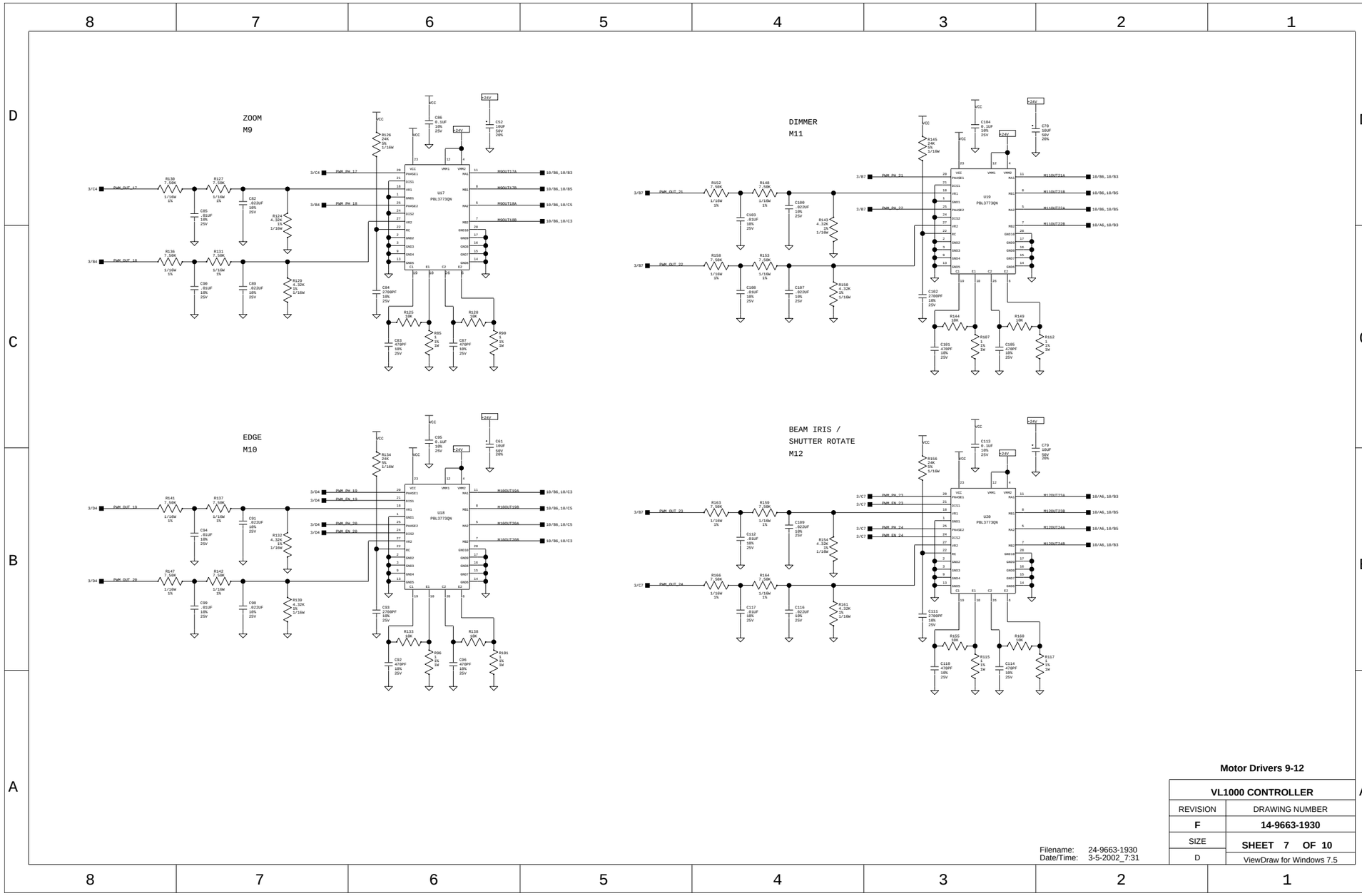
VL1000 CONTROLLER	
REVISION	DRAWING NUMBER
F	**14-9663-1930**
SIZE	**SHEET 5 OF 10**
D	ViewDraw for Windows 7.5

Filename: 24-9663-1930
Date/Time: 3-5-2002_7:31

Controller PCB (24.9663.1930 F) Schematic - Sheet 6 of 10



Controller PCB (24.9663.1930 F) Schematic - Sheet 7 of 10

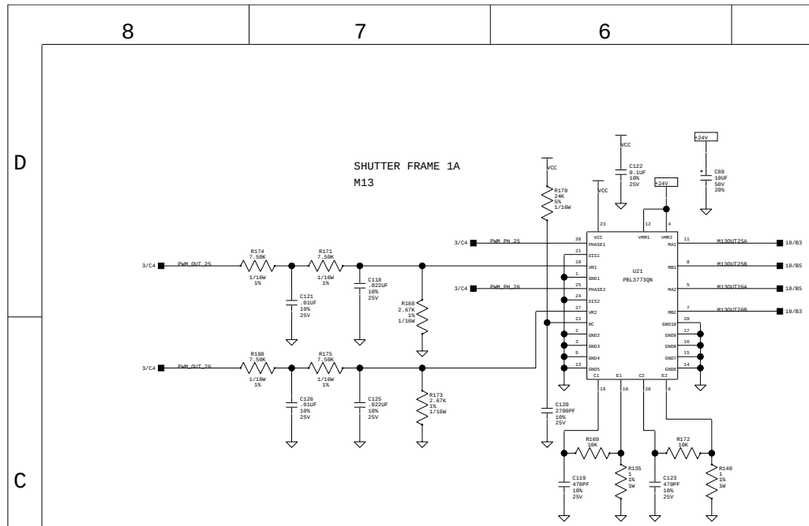


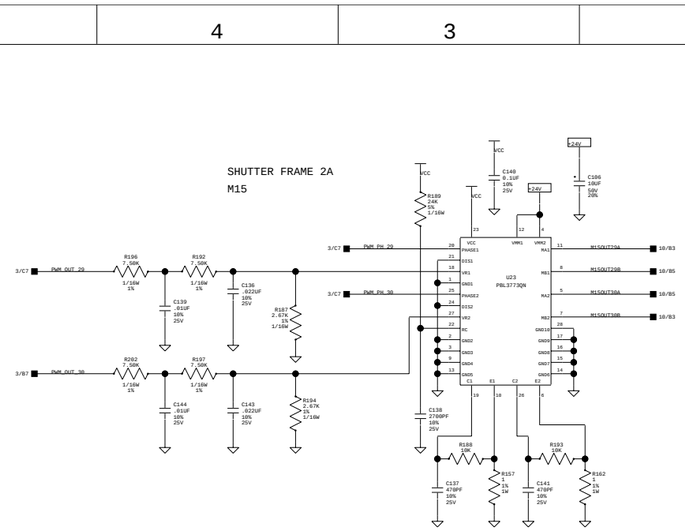
Motor Drivers 9-12

VL1000 CONTROLLER	
REVISION	DRAWING NUMBER
F	**14-9663-1930**
SIZE	**SHEET 7 OF 10**
D	ViewDraw for Windows 7.5

Filename: 24-9663-1930
Date/Time: 3-5-2002_7:31

Controller PCB (24.9663.1930 F) Schematic - Sheet 8 of 10



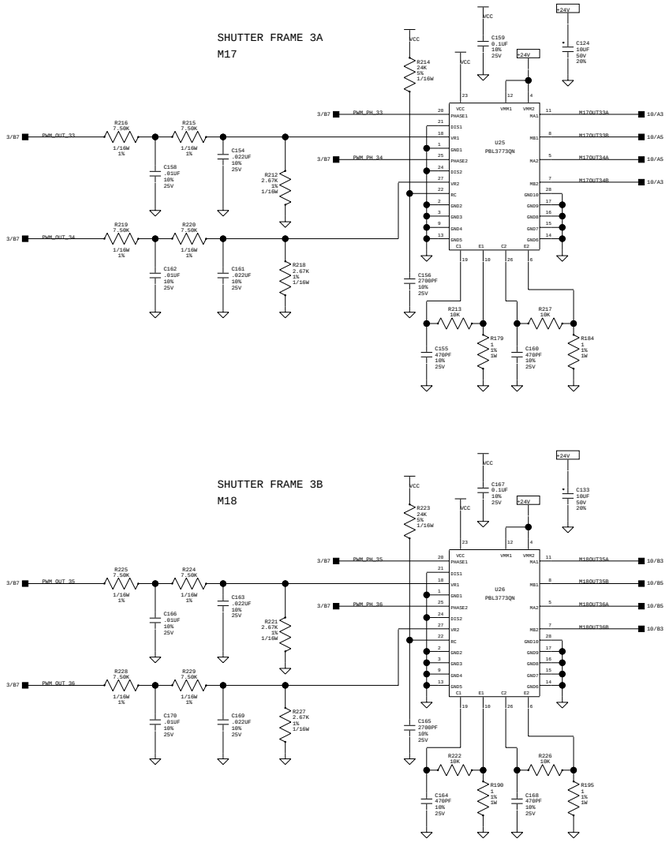


Motor Drivers 13-16

VL1000 CONTROLLER	
REVISION	DRAWING NUMBER
F	**14-9663-1930**
SIZE	**SHEET 8 OF 10**
D	ViewDraw for Windows 7.5

Filename: 24-9663-1930
Date/Time: 3-5-2002_7:31

Controller PCB (24.9663.1930 F) Schematic - Sheet 9 of 10

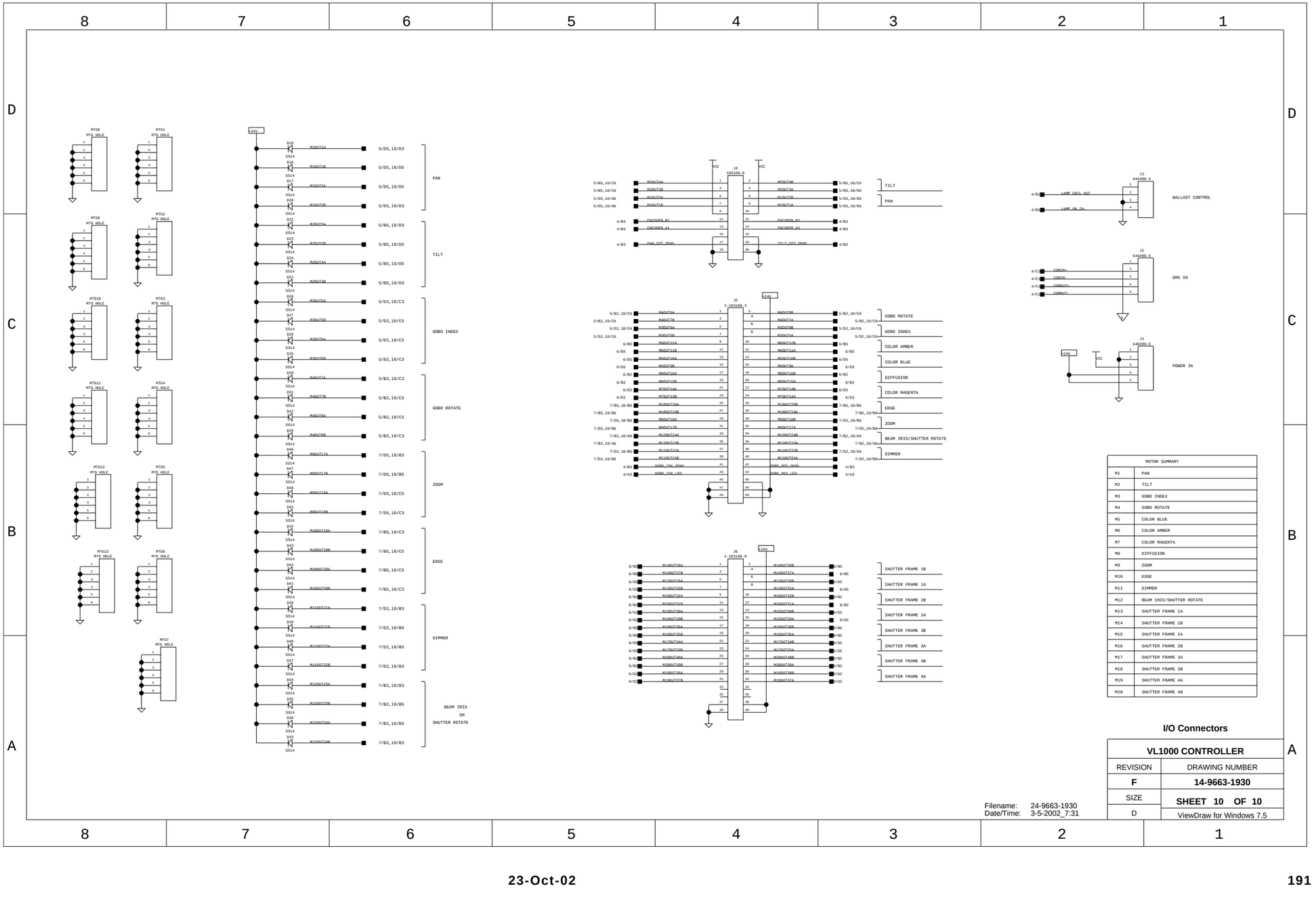


Motor Drivers 17-20

VL1000 CONTROLLER	
REVISION	DRAWING NUMBER
F	**14-9663-1930**
SIZE	**SHEET 9 OF 10**
D	ViewDraw for Windows 7.5

Filename: 24-9663-1930
Date/Time: 3-5-2002_7:31

Controller PCB (24.9663.1930 F) Schematic - Sheet 10 of 10



MOTOR SUMMARY	
M1	PAN
M2	TILT
M3	GOBO INDEX
M4	GOBO ROTATE
M5	COLOR BLUE
M6	COLOR AMBER
M7	COLOR MAGENTA
M8	DIFFUSION
M9	ZOOM
M10	EDGE
M11	DIMMER
M12	BEAM IRIS/SHUTTER ROTATE
M13	SHUTTER FRAME 1A
M14	SHUTTER FRAME 1B
M15	SHUTTER FRAME 2A
M16	SHUTTER FRAME 2B
M17	SHUTTER FRAME 3A
M18	SHUTTER FRAME 3B
M19	SHUTTER FRAME 4A
M20	SHUTTER FRAME 4B

I/O Connectors

VL1000 CONTROLLER	
REVISION	DRAWING NUMBER
F	**14-9663-1930**
SIZE	**SHEET 10 OF 10**
D	ViewDraw for Windows 7.5

Filename: 24-9663-1930
Date/Time: 3-5-2002_7:31